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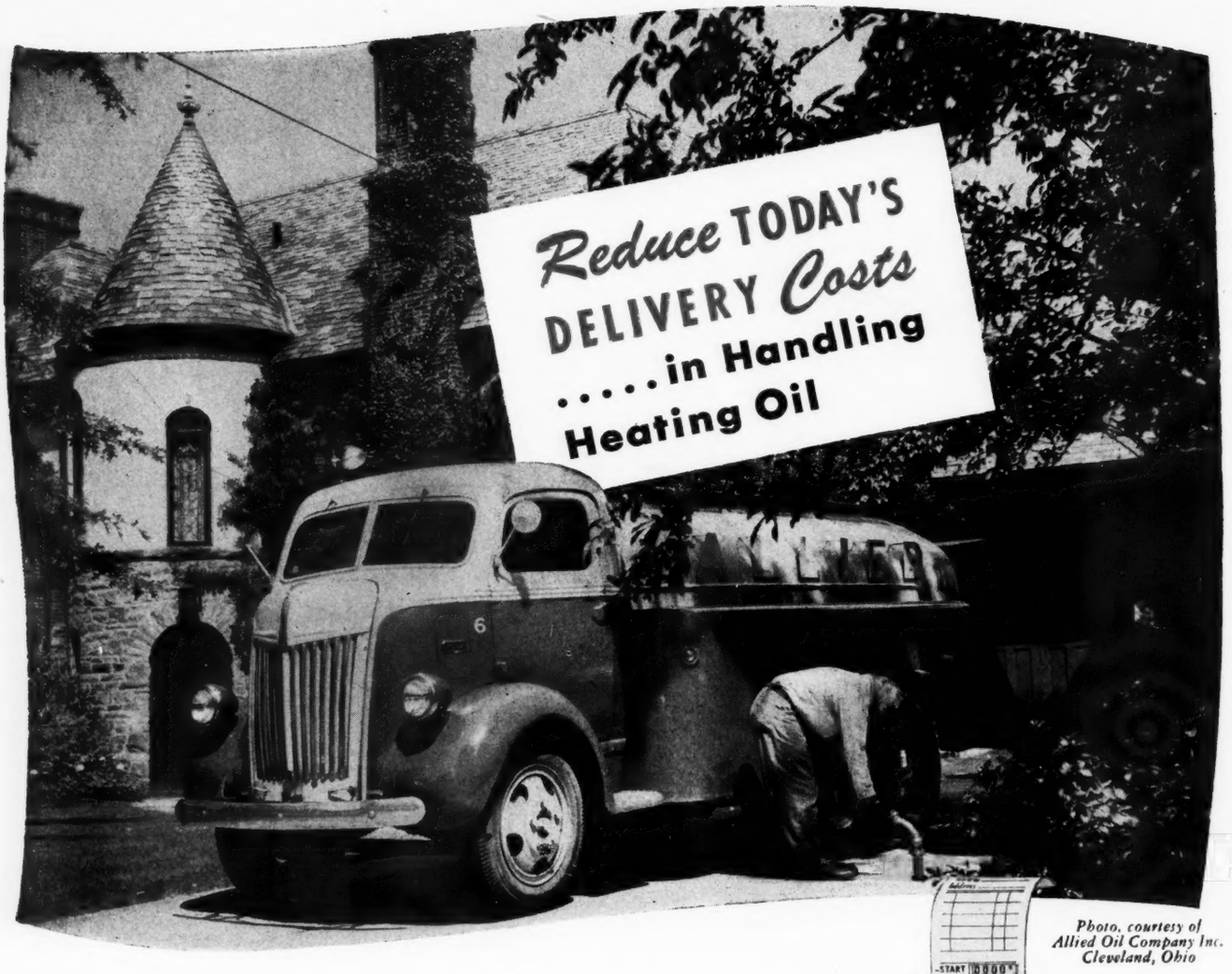

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VOL. 6, NO. 4

fueloil & oil heat

AUGUST

1947

Names in the News

Charles W. Lang has been appointed sales manager, Fuel Unit Dept., Sundstrand Machine Tool Co., Hydraulic Div., Rockford, Ill. He has been associated with Sundstrand since October 1, 1946 and formerly was with Underwriters' Laboratories as division engineer in charge of the combustion section. He is well known in the industry, since his entire business career has consisted of testing and developing oilburners and accessories. During the War, Mr. Lang served as a Lieutenant Commander in the Navy Aviation Ordnance Div.

John P. Graff, whose experience in the oilburner industry dates from 1930, on July 1 became sales manager of domestic equipment, Modern Heat & Fuel Co., Philadelphia, Pa., large distributors of fueloil and oilburning equipment. Mr. Graff's background includes positions as sales manager for Petroleum Heat & Power Co., in Stamford, Conn. and Philadelphia, and also with Standard Oil Co. of Pennsylvania in their Philadelphia office. An Annapolis graduate and a Navy veteran of World Wars I and II, he was decorated twice for gallantry in action and holds the rank of Commander, Retired.

Julius P. Heil's portrait, painted in oils by Christian Abrahamsen, was unveiled on July 11 in Wisconsin's capitol at Madison. Mr. Heil, chairman of the board, Heil Co., Milwaukee 1, Wis., served two terms as governor in Wisconsin, 1938 to 1942. The portrait was the gift of friends who were associated with him during this period. Elmer Barlow, Supreme Court Justice, made the formal presentation and Governor Oscar Rennebohm accepted it

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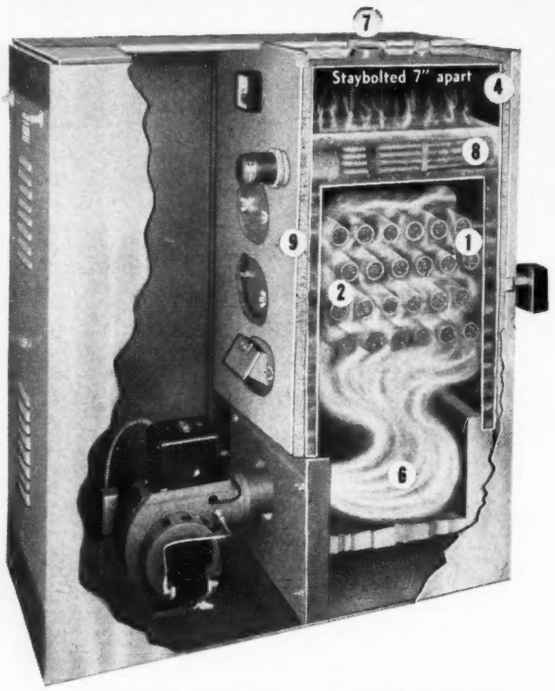

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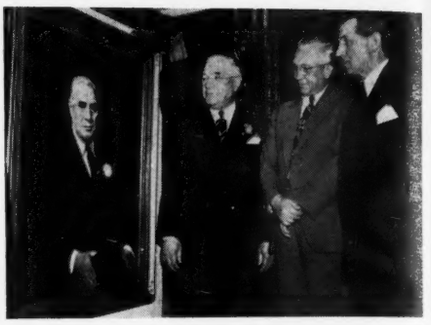

Mr. Heil, left, and Wisconsin's Gov. Rennebohm, view portrait painted by Artist Abrahamsen, right.

on behalf of the state. Mr. Heil started his own business in 1901, financed by $600 he had saved, and weathered the first ten difficult years by working 12 to 16 hours a day for a salary of $2 a day. Today, Heil Co. plants cover 52 acres, employ almost 3,000 people and manufacture products that serve more than 125 different types of businesses and industry.

R. A. Gustafson, at a meeting of stockholders and directors of Sundstrand Engineering Co., Rockford, Ill. on June 30, was elected president and general manager of the organization, which manufactures Sundstrand pressure oilburners. Mr. Gustafson has been secretary-treasurer and manager since 1941 and now controls the corporation.

William H. Olsen has been appointed a member of the Research and Development Div., C. A. Olsen Mfg. Co., Elyria, Ohio, producers of Luxaire heating and winter air conditioning equipment for all types of fuel. Mr. Olsen attended grade schools in Elyria and then spent four years at Staunton Military Academy, preceding his appointment to the U. S. Naval Academy, Annapolis, Md. He served three years as an ensign during World War II, including a tour of two years on a destroyer in the Pacific Theater.

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THE MOST COMPLETE LINE
of Heating Service Instruments

The instruments shown here are available individually as well as in kits containing instrument assortments now being used effectively by thousands of successful heating contractors for sales and service. These kits and the individual instruments are described in Bulletin 729. For free copy of it, fill in coupon below, paste on penny postcard, and mail.

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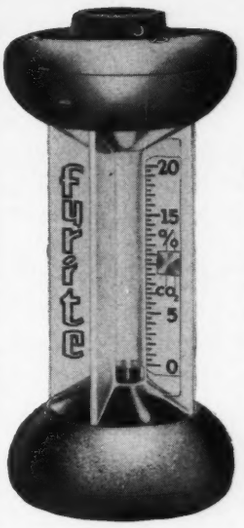

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Outstanding for simplicity and convenience of use. Nothing tricky or complicated about a CO_2 test with the FYRITE. Requires no skill or special training. Accurate within ½ of 1% CO_2. A CO_2 check-up with it requires less than a minute. The instrument, as received, is ready for use. Comes complete with sampling tube, filter, aspirator bulb, and rubber tubing.

POCKET STYLE DRAFT GAUGE

Compact, simple, inexpensive. Ready for use the moment it is taken from its case. Can be slipped into pocket and thus is always ready for a quick check of draft conditions. Especially suitable for use on oil-burning space heaters employing natural draft system.

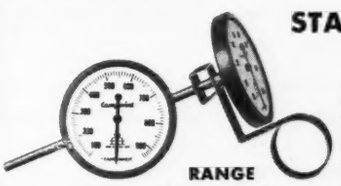
ALL-PURPOSE DRAFT GAUGE

Can be located any distance from test point, and left connected for any length of time to obtain continuous reading of draft while making adjustment. Easy to read accurately even in dim light. Accuracy does not depend upon careful leveling. Has free movement of pointer at zero to indicate "puff-backs."

AIR TEMPERATURE RECORDER

Indispensable for recording new installation performance, balancing heating systems of every kind, and trouble-shooting on service calls. Saves service time, promotes customer good will, shows need for repairs or modernization. Makes written record on easy-to-read chart, 4" in diameter.

STACK THERMOMETERS



RANGE
100°—950°F.

All-Metal Type

Practically unbreakable because of its all-metal construction. As easy to read as a clock. Outstanding for quick thermal response. The slip-on handle protects hand from hot flue pipe.

Pocket Style

A high quality mercury-in-glass thermometer—range 100° to 950°F. Temperature-shock-resisting annealed glass provides greatest possible durability. Case doubles back as handle.

MOTOR OPERATION RECORDER

Records motor-on-and-off time, showing cycling frequency and total time of burner operation during test period. Any TEMPSCRIBE is convertible to either a temperature recorder of any desired range or to a motor operation recorder, simply by changing the door.

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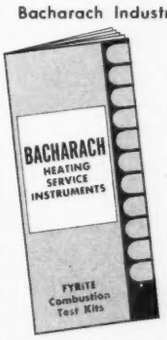
Bacharach Industrial Instrument Co., 7000 Bennett St., Pgh. 8, Pa.



Send Bulletin 729 describing complete line of heating service instruments.

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COMPANY .....

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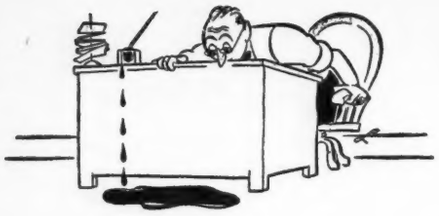
CITY and STATE .....

☐ DEALER ☐ JOBBER ☐ MANUFACTURER



Editorial Leaks

Seldom do we bestow bouquets in this department. It is not that we are so cold and impersonal, but only that the industry is so full of good men that to single one out for orchids is to slight another. From this reviewing stand fortitude, courage, and selflessness come so often to notice that these virtues become commonplace and accepted as the order of the day. Unsung heroes are a nickel a baker's dozen.

Probably no man who throws himself into an association job is entirely unselfish. He expects that he will gain something in information, contact and prestige for the work he is doing for the benefit of all, and more times than not he is right. But he takes a lot of beating for the cheers that are given his good works.

Twice recently we have seen such an unusual display of good, old-fashioned guts that it deserves something more than silent admiration.

At Chicago in June, and again at Portsmouth a month later, members of the Fueloil Supply Committee and the Board of Directors of OHI heard Committee Chairman Carl Jonswold include in his report a full measure of praise for the major oil companies' good work in attempting to increase oil supply in the Middle West. He defended them against attack for alleged unfair practices; coolly balanced the benefits against the annoyances, and concluded that the forces at work were, in general, good.

What few men at either meeting knew was that Carl Jonswold probably had more cause to hate the major oil companies and to criticize their competitive tactics than any man in the room. As a small refiner and independent marketer he had battled for weeks to get crude and product to keep his company in business, only too often to lose control of necessary transport and storage facilities to the bludgeoning power of the competing majors. Nobody knew better than he the points on which they might be criticized. It would have been easier to join the castigation than to defend against it. With every human reason to be bitter, he submerged his personal interests in a remarkably fair and broad analysis of the total work being done for the benefit of the whole industry and its customers.

So, at the risk of seriously embarrassing him, we toss Carl Jonswold this bouquet as he stands with a host of fair-minded, broad-gauge men of this industry.

◈

Any discussion of personalities in the industry at this time is hollow without recognition of the serious loss we have suffered in the passing of Bill Kemp. We have adopted resolutions of respect, and stood in a moment of silence for him, feeling always how empty and futile are these gestures to express the sense of loss we feel. Those of us who were permitted to know him well—his customers, competitors and associates—know the depth of feeling he had for this industry; how shrewdly he appraised its attributes, how loudly he protested its faults. We remember well how thin was the careless, devil-take-the-hindmost attitude he tried to assume, and how much he wanted to be liked by the host of friends he loved.

We shall miss his, "Aw Nuts, you're crazy." We shall miss the twinkle he carried while he rubbed our noses in our mistakes, and the flood of good-natured abuse that heralded his arrival in any gathering. We shall miss his many good works, as will uncounted others.

Few knew, until a eulogy by his pastor, that Bill poured the same enthusiasm and hard work into his community, his church and other organizations that he gave to his industry. He supplied a leavening to the dough of existence that many of us shall miss more than we have the power to express.

◈

Restlessness and impatience with the status quo is a sign of impending action to change conditions, we are told. If so, there probably will be changes made in our heating equipment and processes before long, for there is a noticable impatience in the field at present. One of the more complete and detailed letters is presented in this

(*Continued on page* 96)

Twenty Years Ago

(*August issue, 1927*)

There is no reason to be concerned about the future supply of oil, says J. Edgar Pew, vice-president of the Sun Oil Company, in an article in *Nation's Business*. He recently has returned from Venezuela where large scale oil production is being developed for use in the United States and Europe.

Feature articles are discussing the practicability of using electric ignition on domestic oilburners. Representatives of the automobile spark plug industry see a huge new market in the oilburning business, and claim electric ignition will be popular.

Dealers and large buyers of fueloil are insisting that some standard specifications be drawn for burning oils. The American Oil Burner Association is working with Committee D-2 of the American Society for Testing Materials in an attempt to develop satisfactory standards.

H. W. Sweatt, vice-president of the Minneapolis Heat Regulator Co., has sailed with Mrs. Sweatt for a month in Europe.

Two new sales records have been set on opposite sides of the U.S. Power Plant Engineering Co., Seattle, made 614 sales in 30 days, and the Silent Automatic branch at Boston sold 218 burners at retail in two weeks ending June 11.

Charles A. Lindbergh, who flew the Atlantic in a solo flight last May, is the grandson of Dr. Charles Land, a pioneer developer of oilburners.

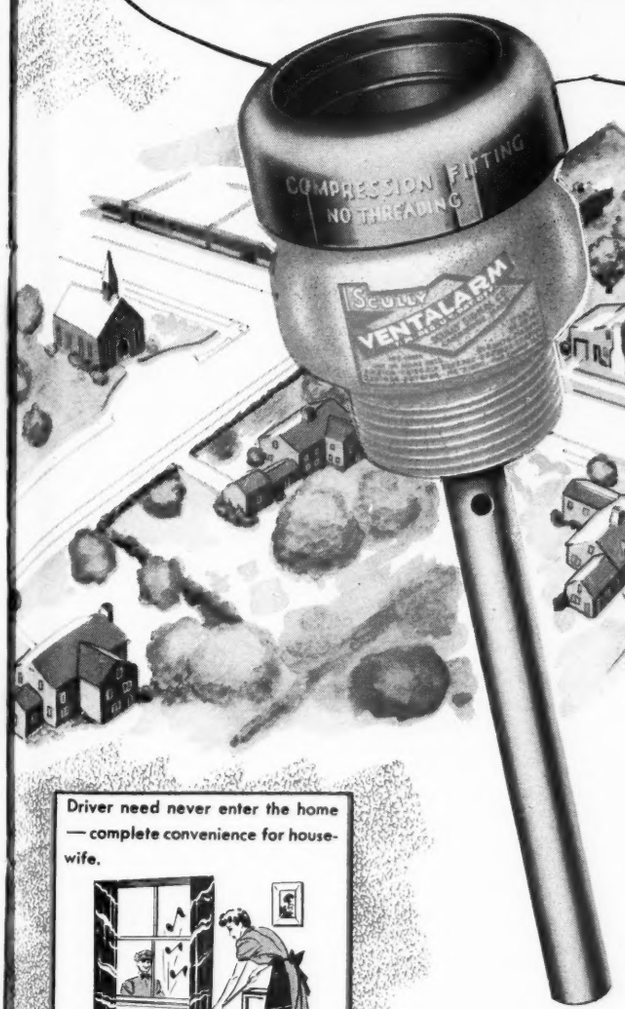
Directors of the AOBA, meeting in July, adopted a plan to continue consumer advertising through October and November. A committee consisting of President Jacobs, George Bullock, J. C. Johnson, C. U. Williams and Morgan Hammers is to seek the help of the major oil companies and electric utility companies in the program.

Northwest Institute of Oil Heating has been formed at Seattle with A. C. Jenkins as president, B. R. Skinner as vice-president, and J. A. Clorety as manager-secretary.

A third edition of the book, "House Heating with Oil Fuel" by P. E. Fansler has been announced.

Home made oilburners built by garage mechanics to burn crank-case drainings are causing fires that frighten the public away from oilburning.

WITH 3500 OIL DEALERS AND 1,000,000 HOME OWNERS



VENTALARM

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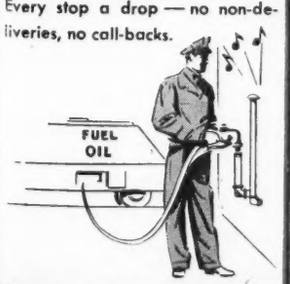
MAKES A DIFFERENCE

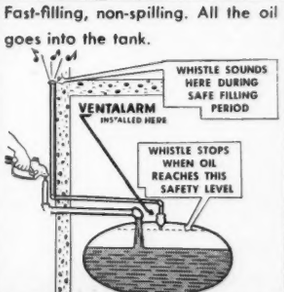
Driver need never enter the home — complete convenience for housewife.

VENTALARM Signal means more deliveries — more time saved.

Every stop a drop — no non-deliveries, no call-backs.



Fast-filling, non-spilling. All the oil goes into the tank.


WHISTLE SOUNDS HERE DURING SAFE FILLING PERIOD
VENTALARM
INSTALLED HERE
WHISTLE STOPS WHEN OIL REACHES THIS SAFETY LEVEL

VENTALARM Model LC for use on existing installations

Over a million homes — more than 3500 local and national fuel oil dealers — now benefit from VENTALARM Signal fast-filling, non-spilling efficiency.

VENTALARM Fuel Tank Fill Signal makes every stop a drop — no non-deliveries, no call-backs. Because your driver need never enter the home, your operating costs are reduced by 5 to 7 minutes per delivery stop.

VENTALARM costs little to install on either new tanks or existing installations; pays for itself the first heating season!

Write us today for complete information on VENTALARM

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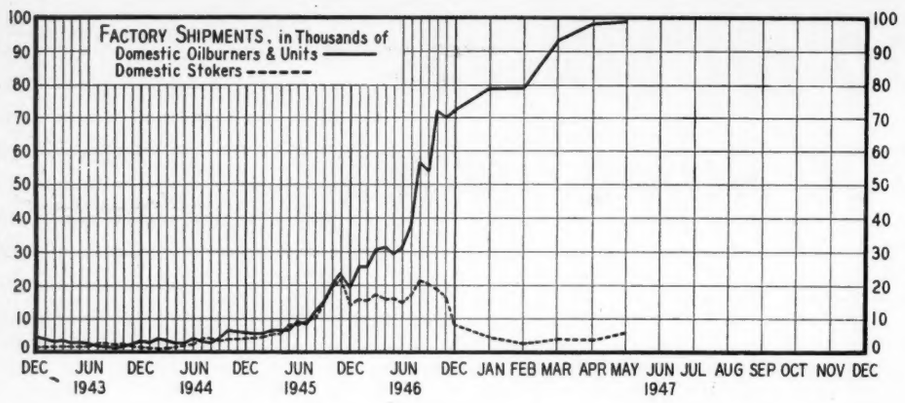
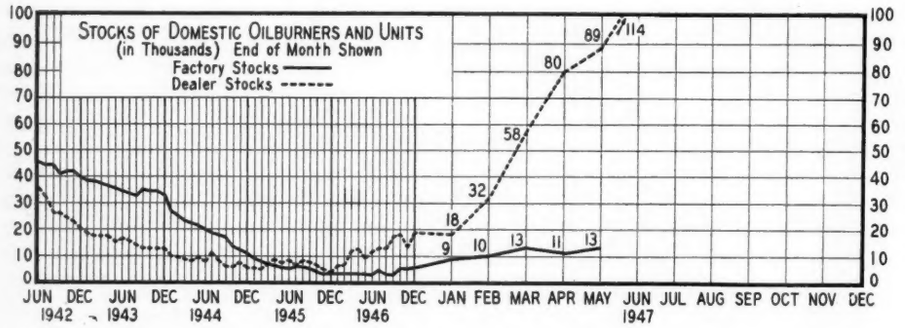

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 162 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	MAY			FIVE MONTHS		
	1947	1946	Percent Change	1947	1946	Percent Change
Conversion	77,468	25,879	+199.3	363,394	128,959	+181.5
Boiler units	5,297	1,365	+288.0	18,140	5,475	+331.3
Furnace units	16,922	2,630	+543.4	71,965	8,437	+752.9
All domestic	99,687	29,874	+233.7	453,499	142,871	+217.4
Commercial	4,520	3,498	+ 29.0	23,027	13,386	+172.0
Total	104,526	33,372	+213.2	476,526	156,257	+204.9

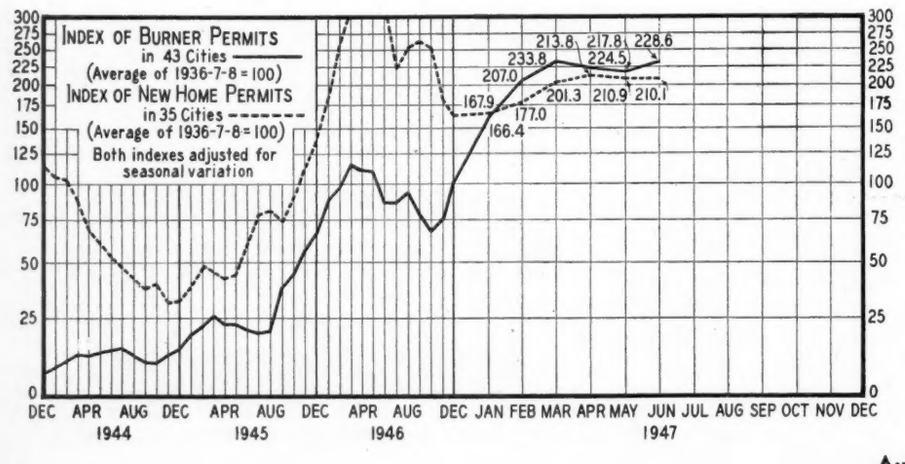

STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942 1943 1944 1945 1946 1947

June Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE BURNERS
Highest	$455	$973	$837
Lowest	229	475	425
June Aver.	348	693	605
May Aver.	349	690	594

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
June	150.2	Six months ago	163.1	June	145.6	Six months ago	148.3
May	152.0	Year ago	126.3	May	146.0	Year ago	132.3


INDEX OF BURNER PERMITS
in 43 Cities
(Average of 1936-7-8 = 100)
INDEX OF NEW HOME PERMITS
in 35 Cities
(Average of 1936-7-8 = 100)
Both indexes adjusted for seasonal variation
DEC APR AUG DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947

Oilheating Trends

INSTALLATIONS OF DOMESTIC oilburners and units in June are estimated at 65,430, more than double the number installed in the same month of 1946. Total installations in the first half year were approximately 317,472, which compares with 164,674 in the first half of 1946. June installations of reporting dealers were divided: conversion 81%; boiler-burner units 10%; furnace-burner units 9%.

New orders taken by dealers during June were 48,849, bringing total new orders for the half year to 211,741. This compares with new orders in the first six months of last year totaling 196,849.

BURNER STOCKS: Stocks of domestic oilburners and units in the hands of dealers on June 30 were approximately 113,846, an all-time high and 28% above the previous peak which occurred a month earlier. Factory stocks at the end of May, the latest available data, were 13,026.

SERVICE INCOME: Reporting dealers had average service department income for June of $2,529, a very slight drop from $2,551 for the same dealers in June 1946. May income had been $2,300 and April $2,478.

OIL SHORTAGE SCARE: The industry has been anxious to get some indication of the effect of oil shortage publicity on burner installations. During the month of June, this factor appears to have slowed down oilburner activity by about 18%. This is based on a question in which the reporting dealers were asked, in addition to how many burners they actually sold, how many individual instances they could recall where the sale or installation was cancelled or deferred because the prospect was worried about oil supply. There was a great difference between regions on this. Dealers along the Atlantic seaboard from Maine to Florida found that oil shortage publicity scared off only about 9% of potential June installations, while in the Midwest 59% were sufficiently concerned to delay getting a burner. The far western states report no significant effect one way or the other.

OIL SUPPLY LIMITS: There has been a great deal of discussion among fueloil distributors and major oil companies over the practice of stating that the amount of distillate available next season is limited to some definite relation to last season. For

example, some suppliers have told their fueloil distributors that they will get the same amount as last year, others have said that the allotment will be raised to as high as 30% above last season. But most distributors have not been given any stated restriction. Of all fueloil distributors reporting this month only 35% have been given any kind of limit on their next season's supplies. Of these, about 25% were told that they would have just about the same as last season and the other 10% were given varying limits of increase. These calculations are based on the East and Midwest only; they do not include the Pacific coast since responsible authorities do not expect shortage in that area.

PARTS SHORTAGES: Perhaps this will be the last time it will be necessary to make a check on shortages of burner repair parts, since supplies seem ample on every item except transformers and motors, and on those the shortage has importantly moderated. The table shows the per cent of dealers who reported serious difficulty getting principal burner repair parts during June, compared to percentages for three previous dates.

	Feb. 1946	*Sept. 1946*	*Feb. 1947*	*June 1947*
Transformers	52%	73%	46%	14%
Motors	49	47	37	10
Controls	44	33	23	0
Pumps	48	27	23	0

The situation is different, however, on installation materials. There is still a considerable shortage of tanks, piping, circulators and wiring. The table shows the per cent of reporting dealers who are having serious trouble getting the principal items, compared with last February and with September, 1946.

	Sept. 1946	*Feb. 1947*	*June 1947*
Piping	43%	34%	28%
Tanks	37	29	34
Fittings	27	33	28
Wiring Material	20	9	10
Copper Tubing	13	9	0
Circulators	12	8	21

Other installation material shortages included sheet metal for ductwork, wall pumps, and draft adjustors, which were mentioned by 3% of the reporting dealers.

CUSTOMER CREDITS: There has been general recognition among credit managers handling consumer sales that collections, for the first time since the war started, are showing signs of slowing down. Oilheating dealers and fueloil distributors this month report accounts seriously delinquent (more than thirty days past due) ranging from 2% to as high as 40% of customers. The weighted average for the lot is 18.3%. It would be well for dealers generally to check their own records against this industry average, to be sure that they are at least doing no worse than that.

BURNER REPLACEMENT SALES: Recognizing that it would be short-sighted for the oilheating industry to go all out for burner installations that create new oil users in a year when the supply of fuel is tight, some industry elements, principally OHI, are looking over replacement possibilities as a means of disposing of a lot of burners to homes that now have antiquated oilheating equipment. Checking to see how much dealers were thinking about this, 30% of those reporting are making an effort to get replacement business and the balance ignores the subject.

It should be possible to sell a good many replacement burners between now and the end of the year if serious effort were put into the project. In a survey of burner replacements in the ten-year period 1932-

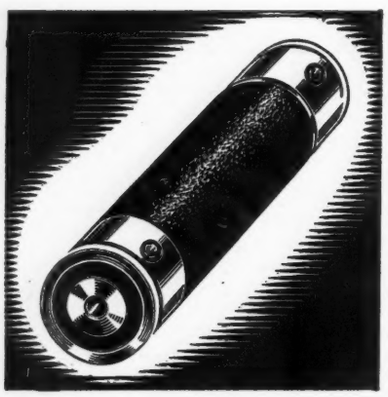
(*Continued on page 168*)

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
June		6 MONTHS			*June*		6 MONTHS	
1947	*1946*	*1947*	*1946*		*1947*	*1946*	*1947*	*1946*
..	..	..	..	Baltimore, Maryland	365	488	1294	2522
..	..	..	..	Binghamton, New York	10	12	49	54
133	45	586	286	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, New York	23	12	96	115
..	..	..	..	Des Moines, Iowa	61	126	..	614
..	..	..	..	Detroit, Michigan	899	348	4511	4957
..	..	..	..	Elizabeth, N. J.	7	2	70	9
28	40	175	174	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	23	34	102	109
..	..	..	..	Hackensack, N. J.	6	4	20	47
133	64	890	366	Hartford, Conn.	..	..	..	..
63	54	231	247	Irvington, N. J.	..	..	..	..
..	..	..	..	Lynn, Massachusetts	12	4	53	30
49	34	165	106	Meriden, Conn.	..	..	..	..
..	..	..	..	Milwaukee, Wisc.	96	149	521	962
184	34	770	264	Minneapolis, Minn.	87	96	402	813
33	58	146	224	Montclair, N. J.	..	..	..	..
54	42	210	228	Mt. Vernon, New York	..	..	..	..
341	..	..	..	Newark, New Jersey	..	..	..	..
51	30	340	259	New Bedford, Mass.	..	..	..	..
78	51	357	188	New Haven, Conn.	..	..	..	..
0	0	0	0	New Orleans, La.	..	..	..	..
32	30	148	132	New Rochelle, N. Y.	3	5	30	66
975	673	4913	2980	Manhattan, Bronx, Rchd	..	..	..	..
73	63	494	184	Norfolk, Virginia	43	20	183	119
1	0	9	2	Oakland, Calif.	..	..	..	..
..	..	..	..	Omaha, Nebraska	73	91	324	461
25	20	97	112	Orange, New Jersey	1	1	4	4
45	47	..	208	Passaic, New Jersey	..	..	..	..
122	100	453	431	Paterson, N. J.	5	7	19	29
1526	543	5055	2629	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	4	12	95	60
125	24	523	184	Portland, Maine	14	5	74	61
784	356	..	1249	Portland, Oregon	..	..	..	..
..	..	..	..	Reading, Penna.	4	9	11	58
215	17	550	202	Richmond, Virginia	32	108	305	771
268	42	1156	276	Rochester, N. Y.	..	..	..	..
22	29	..	110	Rockville Center, N. Y.	6	29	..	42
19	7	159	67	Salem, Massachusetts	7	2	21	9
271	67	949	303	St. Louis, Missouri	33	25	173	177
265	79	1232	620	St. Paul, Minnesota	93	112	433	699
56	10	..	128	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	127	191	1049	1430
..	..	..	..	Springfield, Mass.	35	49	166	331
32	39	173	139	Stamford, Conn.	..	..	..	..
..	..	..	..	Trenton, New Jersey	2	3	45	3
..	..	..	..	Utica, New York	6	2	21	21
246	184	1373	948	Washington, D. C.	..	..	..	..
28	28	115	131	White Plains, N. Y.	12	2	27	18
80	38	462	293	Wilmington, Delaware	2	43	46	132
142	65	781	324	Worcester, Mass.	..	..	..	..
89	56	271	270	Yonkers, New York	..	..	..	..
6247	2969	22,783	12,569	*Totals*	2091	1991	10,144	14,067
+110.4		+81.3		*Percent Change*	+5.0		—27.9	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

CORRECT EXTREME MISALIGNMENT AT LOW COST



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Fueloil Supplies

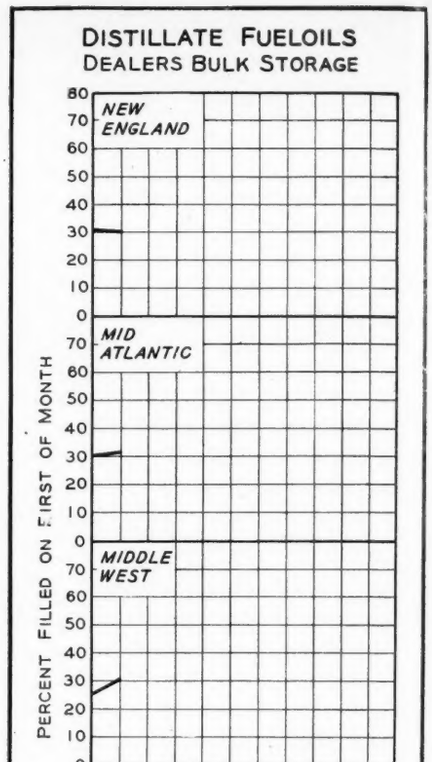
DURING THE NEXT few months we will chart distillate fueloil stocks at principal terminals and also show the bulk storage position of fueloil distributors. Only the critical supply areas will be included.

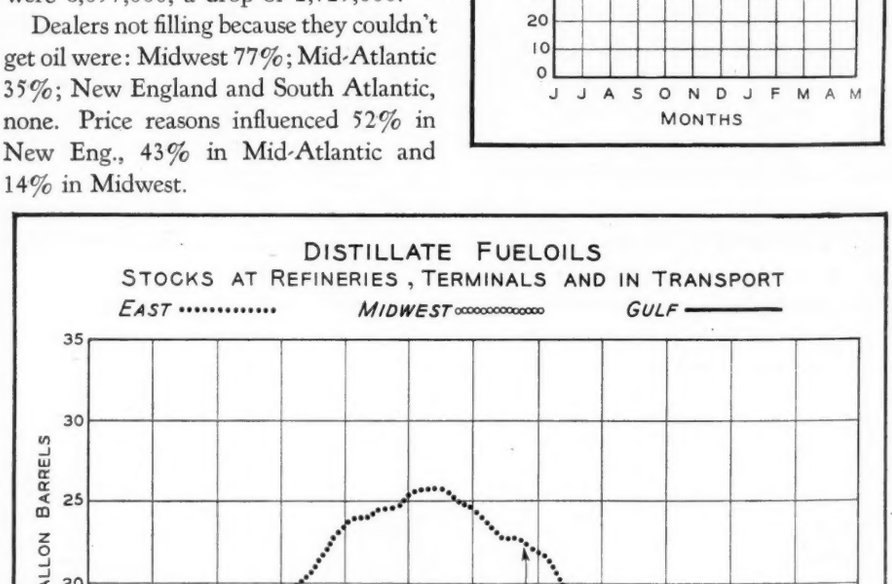
Stocks at principal terminals, refineries and in transport are running just about the same as a year ago, but with demand next season sure to be at least 20% up from last season, stockpiling should be showing more progress. By areas, the Midwest is somewhat below a year ago, the Gulf is considerably above it.

Dealer stocks on July 1 average 31% of bulk storage capacity, up 2 points from the June 1 average of 29%. However, the actual oil in dealer storage is importantly below a year ago. Last summer dealers expected price control to come off and loaded up as heavily as possible, sure of a rise, that did come.

Dealer distillate stocks on July 1, 1946 in the combined areas of New England, Mid-Atlantic, South Atlantic and Midwest were approximately 8,782,000 barrels. On the same date this year they were 6,057,000, a drop of 2,725,000.

Dealers not filling because they couldn't get oil were: Midwest 77%; Mid-Atlantic 35%; New England and South Atlantic, none. Price reasons influenced 52% in New Eng., 43% in Mid-Atlantic and 14% in Midwest.


DISTILLATE FUELOILS
DEALERS BULK STORAGE
NEW ENGLAND
MID ATLANTIC
MIDDLE WEST
SOUTH ATLANTIC
PERCENT FILLED ON FIRST OF MONTH
0 10 20 30 40 50 60 70 80
J J A S O N D J F M A M
MONTHS


DISTILLATE FUELOILS
STOCKS AT REFINERIES, TERMINALS AND IN TRANSPORT
EAST
MIDWEST
GULF
MILLIONS OF 42 GALLON BARRELS
0 5 10 15 20 25 30 35
THIS SEASON
LAST SEASON
THIS SEASON
JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE

A Look at Service Losses

An Outsider Makes some Suggestions on Department Management

by

Arnold R. Beardsley*

How much money is lost annually on the servicing of domestic oilburner installations cannot be accurately stated. Cost studies and authoritative opinions in this industry indicate that there is an average loss of $5.00 annually on each oilburner account. Some dealers lose considerably more and some claim to break even or even make a profit. The latter is admittedly a small group.

Accepting this figure of $5.00 loss per year per account as a reasonably conservative round figure, the magnitude of this loss, nation-wide, is appreciated in view of the fact that there are approximately 3,000,000 oilburners in use. A loss of $15,000,000.00 by any name, in any industry, is a large enough figure to conjure with.

Or, if we look at this from the viewpoint of where the loss comes from it is revealing to know that this $5.00 loss must be taken from an average domestic fueloil account which gives the dealer a net oil sales profit of $8.00 annually. So that this net profit per year per account is reduced to $3.00.

If this money could be regarded as a free-will gift to the consuming public, or a sensible and legitimate cost of holding business—and there is a tendency in the industry to regard it as such—there might be no point in examining this large loss and what lies back of it, its causes, and its cure.

The facts show that this loss on burner service is neither a necessary investment in holding business, nor a free-will gift to the consumer. The consumer is paying enough now for burner service work and, in too many cases, he is paying too much.

Burner service and fueloil dealers, according to a survey made by this magazine, indicate that they need an annual service and parts contract paying $16.00 a year to break even. The average account in one large well operated company recently reported an average cost to the customer of $10.00 per year and a cost to the company of $14.00—a loss of $4.00 per account. This company is looked upon as a leader in this field and successful over a long period of time.

Comprehensive studies show that an annual cost of $12.00-$13.00 to the average account is a sufficiently high toll to pay for service work. Anything above this constitutes an unnecessary tax on the consumer or on the dealer who elects to bear it.

Dealer Attitude Defeatist

We see the waste that lies in this high cost of service work as evidence of poor management—poor utilization of manpower—and, too frequently, a defeatist attitude on the part of management. Too frequently the attitude of management is that nothing can be done to mitigate this uneconomic condition.

It is pertinent to ask why this situation has come about, why it continues, and why business-like efforts are not made to correct it.

One answer is that in many sections of the country prior to 1942 it was customary to give free service to fueloil customers and the cost of service was taken out in the price of oil. A part of the industry became used to the idea of losing money on service. In those days (1941) the cost of servicing the average oilburner was $7.00 per year in one company handling nearly 10,000 accounts. And from that point to date, year by year, this cost became $10.00 in 1944 and over $14.00 in 1946—a one hundred per cent increase in five years.

The interesting feature of this case is that the company above cited lost not much more in 1941 giving free service than it did in 1946 with an average revenue of $10.00 per account.

Many reasons are advanced for the increasing cost of service work, such as:

1. Increased costs of labor and materials.
2. The independent attitude of labor.
3. Lost time due to sickness, to broken down automobiles, etc.
4. Customers are more demanding than at any time during the past 5 years.
5. Heating units are a lot older and in need of much more service than before the war.
6. Bad oil during the war has continued to cause equipment failures—due to sludge, rusty tanks, lines fouled, etc.
7. Competition for fueloil accounts is back and the telephone will no longer suffice to quiet a customer's fears—a personal call is needed—or that fueloil account may be lost to a competitor.

Some of these are contributary reasons for increased costs of doing service work, but these are excuses rather than reasons. They are not the answer to the high cost of Burner Service work.

Some interests in the business may feel that it is better, in view of increasing competition from gas heat, giving free service, to bury the cost of service in the price of fuel and carry a running deficit or loss on service work. On the other hand it may well be that, in too many cases, servicing costs are either not known or not understood by service departments.

Servicemen's Time Comes High

The most expensive item in service work is the serviceman's time. It is worth a very careful examination. You pay him $60.00 per week or at the nominal rate of $1.50 per hour. But, when adjustments are made for lost time and other valid

*Staff Engineer, The Emerson Engineers, Management Counselors, New York 20, N. Y.

non-productive time he is actually costing you $2.50 in direct cost for every hour worked.

He is paid for 2,080 hours in the year: fifty-two weeks at forty hours a week. In the average case we must deduct two weeks' vacation with pay, six paid holidays, and one week's sickness with pay, totaling 160 hours. He has left, therefore, 1,920 hours of working time to give to his work. But if you examine his working time for the year and deduct lost time due to excessive sickness beyond the one week allowed, car break-downs, waiting for instructions, waiting for repairs in the repair shop, jury duty, and other legitimate time losses you will find another loss of 200 to 240 hours a year. Thus his effective working time is reduced to 1,700 working hours. And this takes no account of starting late, of quitting early, which many service men do.

We must now look at his costs again. His salary amounts to $3,120.00 per year and his car expense, paid by the company, is $660.00, giving a total direct cost of $3,780.00 ignoring such small matters as group insurance, social security, liability insurance, etc., paid for by the company.

The serviceman's effective hourly rate or his actual minimum cost to the company now becomes $2.22 per hour. For practical purposes you can safely call this $2.50 per hour. This expense does not include any consideration of premium pay for overtime.

Now let us see what effect this cost has on the average service call (emergency service calls and overhauls combined). He spends 1 hour and 35 minues on the average call and therefore costs the company $3.96 without overhead and incidentals. In one well run company, where sufficient accounting details were available, this cost per average call was $4.00.

Thus we see that the man earning $1.50 per hour is costing the company $4.00 for every call he makes in direct cost and, when company overhead and indirect costs are added, each call costs $6.00 or more. The average receipt per call—including emergency service, overhauls, is $4.50. This is based on $2.50 for 1st hour and $5.00 for an overhaul. There is a loss here of $1.50 per call.

This may seem to be so abnormal as to be incredible. If, however, the average well run oilburner service division will examine its costs exhaustively and critically this round figure of $4.00 direct labor cost for a service call and $6.00 for the total cost will be found to be fair and conservative.

To be sure service costs are elusive and the control of service costs is admittedly difficult. Peaks and valleys of activity, the carrying of servicemen through the valleys, the indeterminate nature of work needed on a service call, and the fact that the serviceman is more or less on his own —all call for the highest kind of supervision and leadership. Driving and constant checking the serviceman will destroy his morale and accomplish little from the standpoint of getting better and more economical service.

And, combined with this, the service superintendent or manager has not been trained, nor is he able, to look at his operations critically and from a cost viewpoint. He has been concerned with giving service and contending with a hurly-burly of complaints and activities that would drain any but the most rugged. He is always catching up and never gets caught up long enough to indulge in the luxury of thinking ahead and planning. But don't shoot the service manager—he is doing the best he can. He has a thankless job—often underpaid—and he needs help.

If he could take time out to analyze service performance over a period of a year he could make some revealing comparisons. These comparisons would soon bring ineffective performance to light and suggestions for improvement.

Suppose we look first at some overall figures. Thus, a service call (exclusive of overhauls), based on a year's experience with a large group of trained servicemen, takes on the average one hour and twenty-five minutes (1.42 hours)—including travel time. This is equal to 5.6 calls per day. If you ask a serviceman how many calls he averages a day the answer is usually eight or more. And a service superintendent will give the same answer.

If we look into this average performance month by month we find the following strange variations in hours devoted to an emergency service call.

Average Hours Per Emergency Service Call

Jan.	1.42	Jul.	1.38
Feb.	1.5	Aug.	1.53
Mar.	1.62	Sep.	1.3
Apr.	1.55	Oct.	1.2
May	1.64	Nov.	1.4
Jun.	1.6	Dec.	1.4

We note here a variation from 1.2 hours to 1.64 hours per call. So, if you speak about efficiency it is necessary to specify the month. It is very important to know, however, that some servicemen consistently average less than one hour per call or at least eight calls per day.

In most companies the annual summer overhaul program is fitted into this service activity to keep servicemen engaged during the summer months. Permanence of employment is as desirable for the company as for the employee.

The average performance on the summer overhaul covering a year is 2.24 hours or 2 hours and 15 minutes per job.

If we look into this performance month by month we find the following variations:

Average Hours Per Overhaul

Jan.	1.97	Jul.	2.15
Feb.	2.37	Aug.	1.8
Mar.	1.78	Sep.	2.3
Apr.	1.88	Oct.	1.68
May	2.3	Nov.	1.78
Jun.	2.4	Dec.	2.05

On this work too we see a similar variation in working efficiency as we saw above on service calls. In this case while the year's average was 2.24 hours per overhaul, in October it took only 1.68 hours, while in June 2.4 hours were consumed.

Here too it is important to know that some servicemen consistently average two hours or less on a complete overhaul. And in five months in the year the average of all men is less than 2 hours for each overhaul.

All these variations reveal ineffective scheduling, planning, supervision and training. At the same time they reveal standards of performance which can be accepted as reasonable.

We usually hear it said that you can't plan service work and you can't schedule man-hours—"There are too many variables in service work."

If you have adequate records you will find over months and years that, in your geographic area, your service calls form a definite pattern when separated by months. To illustrate we show below the pattern found in one large city on the Eastern seaboard.

Percentage of Service Calls Monthly

Jan.	13.1	Jul.	3.8
Feb.	9.8	Aug.	4.1
Mar.	7.4	Sep.	7.7
Apr.	5.4	Oct.	15.3
May	5.3	Nov.	12.2
Jun.	3.6	Dec.	12.2

And if we look at this again from the viewpoint of man-hours instead of calls we find the following pattern:

Percentage of Hours Spent on Service Calls Monthly

Jan.	13.1	Jul.	3.6
Feb.	10.4	Aug.	4.1
Mar.	8.7	Sep.	7.1
Apr.	5.8	Oct.	12.9
May	6.1	Nov.	12.1
Jun.	4.1	Dec.	12.0

The volume of emergency service calls forms an inescapable pattern and the service organization must gear itself to take care of the heavy load of service calls which are received in the first cold days of the Fall. For the rest, the available service man-hours must be scheduled into an overall plan of taking care of a decreasing number of service calls and an increasing number of overhauls.

Chart I helps visualize the picture of what goes on—a monthly distribution of time in man-hours spent on emergency service calls and on overhauls. The chart also shows the amount of avoidable lost time each month. Note also, that the number of servicemen was the same throughout the year.

This immediately brings to light an interesting situation. The man hours on emergency work shows a typical seasonal pattern. But the overhaul program is not properly geared into this pattern and utilization of man hours is spotty and ineffective. If this looks bad to you compare your own results for a year.

Projected Schedule of Emergency Service Calls & Overhauls Per 1000 Accounts
1.86 Service Calls Per Account

	% Emergency Service Calls	*Emergency Service Hours 1 call per hour*	*Available Man Hours Allowing 15% loss*	*Hours Available for Overhauls*	*Overhauls @ 1 in two hours*
Jan.	13.1	244	300	56	28
Feb.	9.8	182	300	118	59
Mar.	7.4	138	300	162	81
Apr.	5.4	100	300	200	100
May	5.3	98	300	202	101
June	3.6	67	300	233	116
July	3.8	71	300	229	114
Aug.	4.1	76	300	224	112
Sept.	7.8	145	300	155	77
Oct.	15.3	285	300	15	7
Nov.	12.2	227	300	73	36
Dec.	12.2	227	300	73	36
Total	100.0	1860	3600	1740	867

What Scheduling Can Do

If we take the foregoing percentage monthly distribution of emergency service calls and then base our estimates on:

a. 1,000 accounts.
b. 1.86 emergency service calls per account per year.
c. Eight service calls per 8 hour day, or 4 overhauls per 8 hour day.
d. An unavoidable time loss of 15%.
e. Two men working a 40 hour week.

We can then establish a work program for the year as shown below. And this program represents a definite attainable goal. When the new condition is graphed we have the picture in Chart II to compare with the one showing actual conditions and results.

This utilization of manpower is the crux of the problem and it is going to take the most intelligent kind of handling to correct it. So much can be accomplished by better supervision; some

CHART I

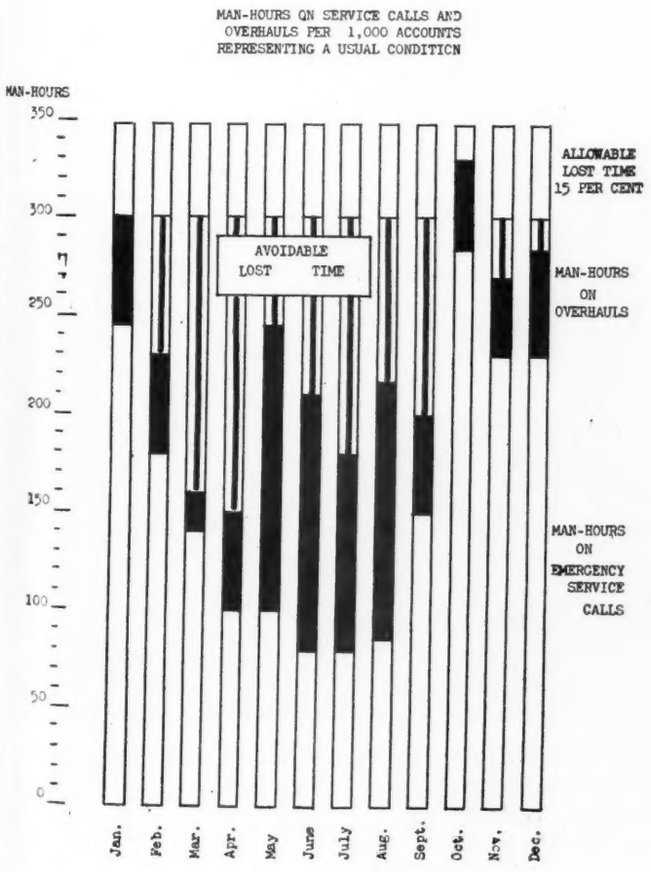
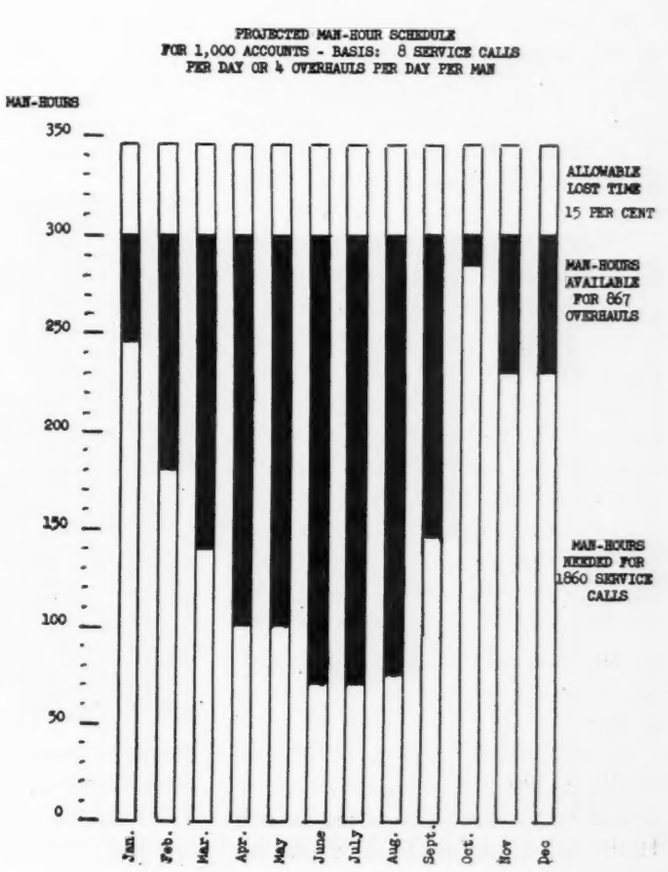


CHART II



fuel oil & oil heat

improvement can be made by more intelligent planning and scheduling of overhaul work to fit into the emergency service pattern; but, probably, above all, the time has come to educate servicemen in the simple economics of service costs to obtain his cooperation.

It is likely that the average serviceman thinks in terms of earning $1.50 an hour and the average service call charge to the customer being $2.50 thus gives the company a nice profit on his time. Changing his viewpoint calls for candor and frank explanations as to the cost of doing business and keeping him in a job.

We have found that it is not too difficult a task to raise the average number of service calls from an average of 5.6 a day to eight a day. This represents an improvement of 43 per cent and this, in terms of money, almost completely wipes out the loss that is now being taken of $5.00 per account. A goal of 4 overhauls a day, or one in every two hours, adds another saving. And this goes almost all the way to eliminate service losses.

Removing the remainder of the loss lies in better merchandising of the annual service contract. It should be added that with the above service performance the annual contract (covering all required free parts and service) can be sold on a break even basis at $12.50. And, instead of the usual 25 per cent of accounts on the annual contract paying $15.00, good merchandising can increase this percentage to at least 60 per cent.

Standards Bureau Test House Measures Heat Distribution

In order to get data on the temperature distribution in an entire house, a series of heat distribution tests of several types of heating systems have been conducted at the National Bureau of Standards by Richard S. Dill and Paul R. Achenbach.

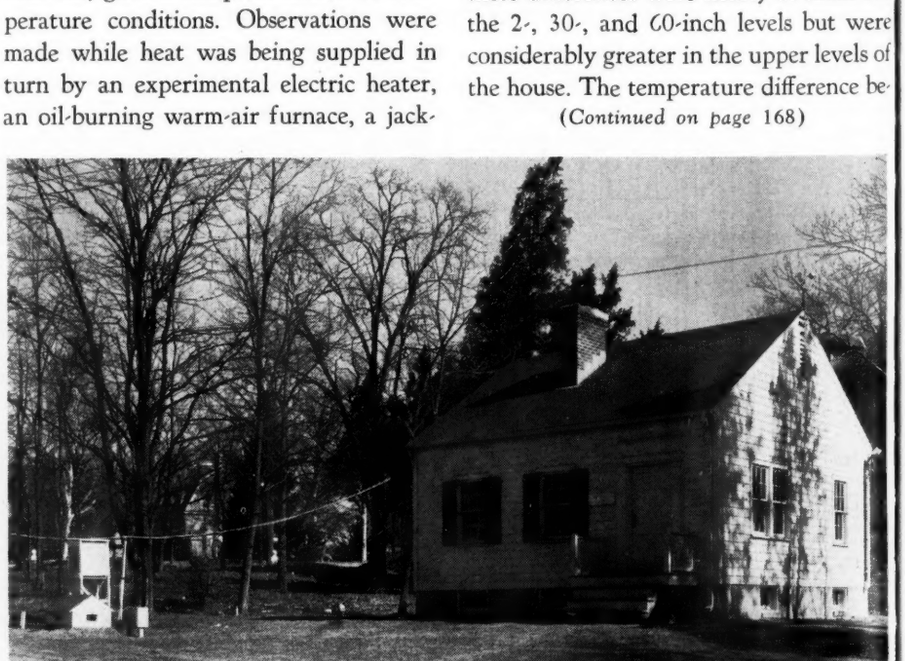
A full scale house, in which complete heating systems can be installed, was constructed at the Bureau. Designated as a test bungalow, it is similar in plan to house B described in F.H.A.'s Technical Bulletin No. 4, "Principles of Planning Small House." It has four rooms and bath, with a central hallway. The walls are conventional in construction consisting of ½-inch gypsum board on the inside and 2- by 4-inch studding with sheathing and lap siding on the outside, separated by a layer of building paper. All the windows are double hung with the exception of that in the bathroom, and one of the two in the kitchen. The double floor of 1-inch pine includes building paper between the subfloor and finish floor. For the heat distribution tests the walls were not insulated but a 2-inch blanket of wood-fiber insulating material was laid over the ceiling. Weather-stripping is not provided for windows or doors.

During the tests, data on temperature conditions inside the bungalow were recorded by various types of instruments. Heat-transfer coefficients for floors, side walls and ceilings were measured by the Nicholls type of heat-flow meters fastened to the surfaces. Thermocouples located at various levels of the rooms, on the top and bottom of the floor, on the inside and outside of the walls, and in the basement and attic air, gave a complete record of temperature conditions. Observations were made while heat was being supplied in turn by an experimental electric heater, an oil-burning warm-air furnace, a jacketed gas-fired space heater, a jacketed oil-fired space heater, a single gas-burning gravity floor furnace, two gas-burning gravity floor furnaces, a gas-burning floor furnace with forced circulation, an oil-burning gravity floor furnace, and a conventional gravity hot-water heating system.

From the standpoint of comfort, the temperatures from the floor to 5 feet above the floor are more significant than the temperatures at higher levels. The tests showed that the average temperature differences produced in the test bungalow between the 2-inch level and the 60-inch level, with continuous forced circulation of air through a plenum chamber, with a forced-circulation gas floor furnace, and with a gravity hot-water heating system, were less than 10° F. when the outside temperature was 32° to 38° F. The temperature differences produced in this same zone by all the other devices tested ranged from 14° to 18° F. at comparable outside temperatures.

The average horizontal temperature differences between rooms at all levels of measurement ranged from 2° to 4° F. for the several floor furnaces and for the gravity hot-water system. For the electric warm-air furnace and the oil-burning furnace, when attached to a plenum chamber, these differences were nearly as small for the 2-, 30-, and 60-inch levels but were considerably greater in the upper levels of the house. The temperature difference be-

(*Continued on page 168*)



Bureau of Standards *test house for measuring temperature distribution. Rooms have movable ceilings, adjustable to any height between 7 and 9 ft. by overhead screw jacks. The house has been completely enclosed with an insulated shell to simulate any temperature condition*

Don't Abuse Nozzles

Care in Handling Burner Tips Will Pay Dividends

by

Eugene O. Olson*

A YOUNG man just out of college, with no job, went to work for a plumbing and heating contractor on a part-time basis and spent the rest of his time on the job to learn more about the trade. Among other things, he wanted to learn oilburner service, so the proprietor suggested he go with one of the plumbers on service calls. The plumber was very new to oilburner service, but he had installed a few burners and had done a good job. Who could be better qualified to teach the young man about oilburners?

On his first trip with the plumber, the complaint was "no heat." They cleaned the line strainer and then took out the nozzle for cleaning. Here the young man was not qualified by previous experience to be of assistance so he watched the procedure. After a broom straw, hot water and a splinter off a two-by-four had failed to open the orifice, the plumber reached in his tool box for a triangular file and reamed out the "carbon" in the outlet of the nozzle orifice. To complete the job of "opening up the hole" he found a piece of fine wire on a shipping tag and it worked. He then reassembled the burner, started it and found that the fire was smoky, large and lopsided. He explained that the nozzle was no good and he would have to put on a new one. So he reached in his pocket and fished out a nozzle which he had brought along in case he needed it. The cap had come off the container and the nozzle was loose in his pocket. He had the strainer in his other pocket. Needless to say, they had a lovely time before they got the burner running and what should have been a thirty minute service call took two hours.

This is not an imaginary experience but actually happened—in 1932. Not only did it happen in 1932, but I have seen nozzles which have received similar treatment in 1947 either by the home owner or the serviceman, or both. Of course this is extreme abuse but there are many varieties of abuse of nozzles, most of it merely the result of thoughtlessness. Servicemen who know how nozzles are made treat them with respect.

Nozzles are made with the same degree of precision and care as a watch. By ordinary standards, the functional dimensions in a nozzle are extremely small, especially so in the smaller sizes now commonly used in domestic burners. For example, orifices under .010 inch (ten thousandths of an inch) are common. As a comparison, a small sewing needle is .020 to .030 inch in diameter.

The slots in these same nozzles are even smaller. In a .75 gallon nozzle with 3 or 4 slots, they may be only .005 inch deep. Compare that with a good grade of bond writing paper, which is .004 inch thick, or a hair from the head of your favorite brunette, which is a little over .002 inch thick. If the dimensions of the slots or orifice vary .0005 inch (one-half-thousandth of an inch), the nozzle may be the next higher or lower size.

The nozzles not only must have these small dimensions to serve as a metering device but these same oil passages, and especially the orifice, must have a high finish as well. This is essential to insure smooth, uniform sprays. The smaller the nozzle, the more critical is the finish.

Avoid Dirt

These facts on nozzle dimensions are mentioned here simply to impress upon the reader the importance of intelligent care of oilburner nozzles. Dirt particles do not have to be very large to cause trouble. In a nozzle factory, the nozzles and parts are carefully handled to avoid contamination with dust and grit or lint from clothing and wiping cloths. Test oil is filtered constantly with finer than average filters to prevent contamination during spray testing. Compressed air used for blowing parts is filtered to prevent moisture and rust from getting in them. The nozzles are handled in such a way as to avoid damage to the sealing surface or to the orifice.

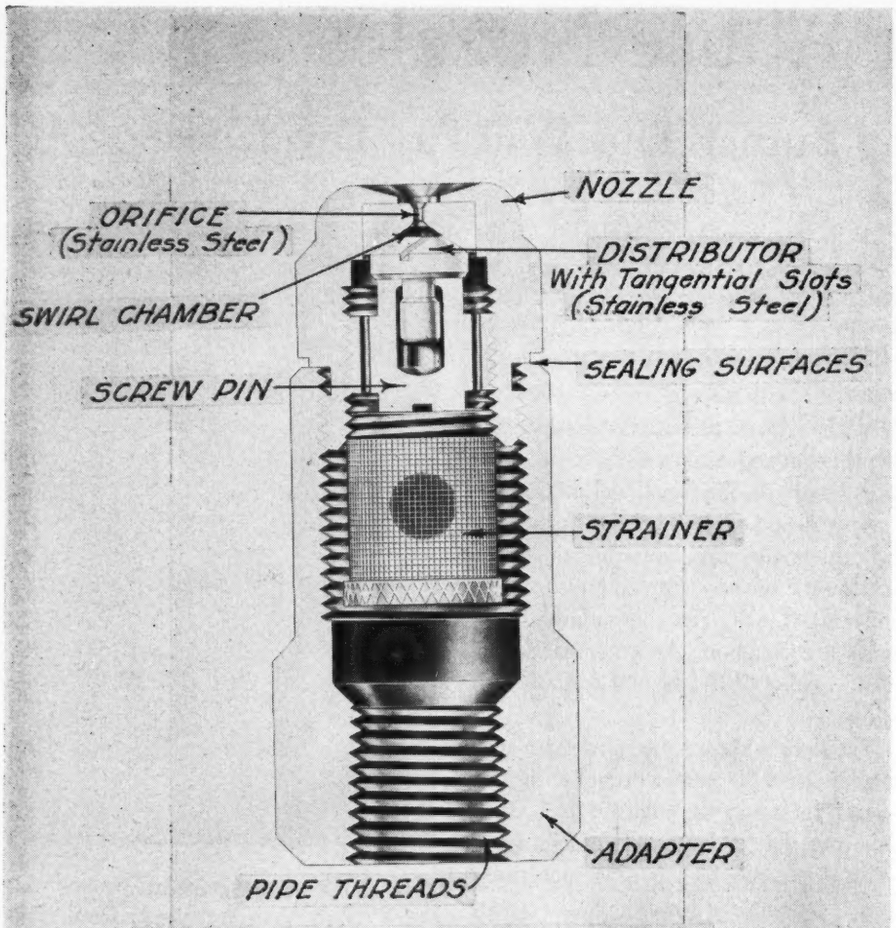
Eugene Olson

These are just a few of the precautions taken in the factory and indicate the importance of careful handling in the opinion of those who make nozzles.

Equal care should be exercised by the oilburner manufacturer, the jobber and the dealer in their handling of nozzles. For example, nozzles should be stored in a clean place, free from dust, easily accessible and orderly. When you receive a shipment of nozzles, leave them in the box if possible. Do not pour them into an open bin which catches dirt and permits the nozzles to rattle around in it. Some jobbers and dealers have neat, especially built shelves or drawers, and these are fine. Some nozzle manufacturers ship their nozzles in attractive boxes designed for stacking on a shelf, with sizes marked on the boxes. These boxes simplify the stock handling problem if the nozzles are left in them, the same as is done with many other lines of merchandise. There are probably many suitable ways of handling nozzle stocks but the important thing is to KEEP THEM CLEAN.

When you take nozzles on a job, do

*Chief Engineer, Nozzle Division, Delavan Engineering Co., Des Moines, Ia.



NOZZLE & ADAPTER ASSEMBLY

not carry them in your pockets. Lint and dust may work into the containers through the smallest crevices and cause trouble when the nozzle is installed. Most nozzle manufacturers supply a service kit equipped to carry nozzles and tools and to keep them clean. These are recommended both for convenience and cleanliness.

It is very important to use clean tools when installing a nozzle. Grit on tools will probably not get through the strainer, but grease on your tools, loaded with dust and lint, can get through a strainer and cause trouble. So can grease and grime on your fingers. It isn't safe to lay a nozzle down on the basement floor either, unless it is a larger capacity nozzle. Even then a grain of grit on the sealing surface may prevent a perfect seal when the nozzle is screwed into the adapter.

While on the subject of tools, it might be well to discuss the assembling of nozzles. The screw pin need not be screwed down as tight as a man can make it with a large screw driver. It must be tight enough to insure sealing of the area between the slots so as to prevent passage of oil into the swirl chamber anywhere except through the slots. That means that the screw pin should be screwed down firmly but not hard. A little experience and common sense will determine the pressure required by each serviceman to accomplish this.

Always use an oil filter on small burners. A good filter will remove much of the foreign matter that could go through a 100 x 80 mesh strainer and will insure better nozzle performance. On nozzles under 1.00 GPH, a finer than average filter is sometimes necessary as well as a 200 mesh nozzle strainer. Nozzles 1.00 to 1.35 GPH should have 120 mesh nozzle strainers. Above 1.35 GPH, 100 mesh strainers are satisfactory. Nozzles above 5 GPH may require more strainer area than that of a standard nozzle strainer. Double length strainers are used by some servicemen for those sizes.

Cleaning of nozzles is a subject on which there has been a great deal of discussion. Different cleaning methods are used for different contaminants. Loose, stray dirt or lint can best be removed with a clean compressed air jet. Second best method is to rinse the parts in a solvent, such as gasoline, naptha or carbon tetrachloride. It is not safe to rinse nozzles under the hot water faucet because of the danger of loose scale and rust getting into them.

Deposits of soluble tars and gums from the fueloil can be removed by the solvents mentioned above. This should be followed by blowing with air or rinsing in solvent.

Deposits of so-called "carbon" in the slots, swirl chamber and orifice are not so easily removed. The deposit is not carbon, except in rare cases, but is the deposit from the oil subjected to heat and is known in the automotive industry as "varnish" and "gum." Some oils deposit more of it than others and the hotter the nozzle, the more varnish and gum are deposited. These repeated layers of varnish and gum, which accumulate with repeated starting and stopping of the burner, are baked hard and are very difficult to remove. This is the material which tempts a serviceman to use a file or a wire for cleaning. Sometimes it can be removed from the slots and orifice with a toothpick and mild solvent. In many cases, however, a strong solvent is necessary. In any case, *don't use any tool harder than wood on the slots and orifice;* you may damage or distort them. Under these conditions it might be cheaper for both the customer and the dealer to install a new nozzle and throw the old one away.

Nozzle Life

That brings up the subject of what is the life of a nozzle. There are many opinions on that subject but very little recorded evidence. It is a known fact that with clean oil a nozzle can give satisfactory service for several years. Its operation is not usually impaired so much by wearing away of the orifice as it is by the coating of varnish and gum and tar on the orifice outlet and in the slots and swirl chamber. This coating forms gradually and impairs the efficiency of the burner long before it causes trouble. Cleaning a nozzle is likely to damage the orifice also, especially if the coating on it is very hard

A handful of nozzles *can be as much a service liability as an asset. Handle with care. Treat them right.*

to remove. For these reasons, and also to reduce winter service calls, many servicemen are recommending the installation of a new nozzle at each summer cleanup. This is cheap insurance even though the nozzle could be made to do another year. The automobile serviceman does not hesitate to recommend "a new set of spark plugs every 10,000 miles," even though they could be made to last 50,000 miles, and the automobile owner is sold on the idea that it is a good investment. A new nozzle each year is also a good investment, especially if the fueloil is not clean.

Nozzle strainers should be handled with the same care as nozzles with respect to cleanliness. If the strainer is not clean, it will naturally contaminate the nozzle.

Adapters, Too, Need Care

Adapters have never received enough attention. They must also be carefully machined and carefully handled. Nozzles have been blamed if an adapter is made with an oversize tap drill and the nozzle threads are stripped when screwed up tight. The nozzle also gets blamed if the sealing surface on the adapter is damaged and there is an oil leak between the nozzle and the adapter. Don't pour a box of adapters into a bin. The smooth sealing surfaces are likely to become scratched and notched and those adapters will leak when subjected to 100 pounds pressure. Don't trust adapters shipped or handled in bags. Nozzle manufacturers ship them in boxes, neatly packed in layers separated by cardboard, to prevent damage. Keep them that way and save yourself some trouble. On the job adapters and strainers should have the same care in handling as is given nozzles.

Important "Don'ts"

As a quick check list, here are a few "don'ts" on nozzle care:

1. Don't dump nozzles, strainers or adapters into open bins or drawers.
2. Don't remove nozzles from containers until you are ready to install them.
3. Don't carry nozzles in your pockets.
4. Don't handle nozzles with grease, grit or lint on your hands.
5. Don't use dirty tools on nozzles.
6. Don't lay nozzles or strainers on a dirty surface.
7. Don't clean a nozzle with anything harder than wood.
8. Don't use damaged adapters.
9. Don't use a damaged nozzle.
10. Don't install a small burner without an oil filter.

Oil Man Sees No Hardship From Tight Midwest Supply

"TRANSPORT FACILITIES into the Midwest have had to absorb a dual impact of reduced local production of crude oil and a greatly expanded demand," according to testimony of John W. Boatwright, manager of Sales Research for Standard Oil Company (Ind.), in testimony before the National Resources Economic Subcommittee of the Public Lands Committee of the U.S. Senate, July 15. Though supply of products may be tight for a few months, Mr. Boatwright believes "No really significant hardship should result."

In his summation of the present petroleum situation in the country, Mr. Boatwright told the subcommittee:

"The demand for United States petroleum products for the year ending December 31, 1947, will approximate 5,700,000 barrels daily. This average daily demand on an annual basis is greater than the peak level of accomplishment in any one month during the entire war period. It is 350,000 barrels daily higher than the top *annual* level of accomplishment during the entire war period.

"The estimate of 5,700,000 barrels daily for 1947 includes approximately 400,000 barrels daily for export. Total requirements placed on the oil industry will be approximately 380,000 barrels daily greater than was experienced in 1946.

"To meet this demand for petroleum products, the industry will have to produce crude oil and operate its refineries at a level of approximately five million barrels daily. The supply part of requirements will be made up of approximately 450,000-480,000 barrels per day of imports of crude and products, 355,000 barrels per day of natural gasoline and condensate, and the remainder of approximately five million barrels per day will come from domestic production of crude oil. Now let us see what the industry is accomplishing.

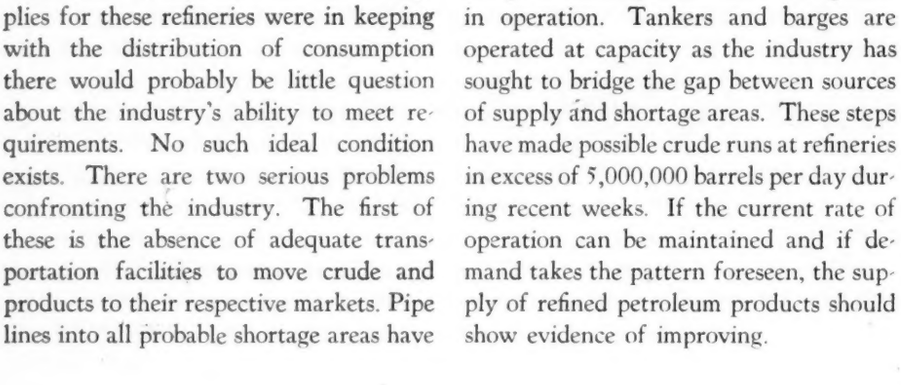
"For the three months ending June 28,

the industry has reached and has maintained a domestic production rate in excess of 5,000,000 barrels per day. Imports through the first five months of 1947 averaged 469,000 barrels daily or slightly better than 450,000 barrels per day, indicated above. Output of natural gasoline and condensate of 355,000 barrels per day was reached during February and has since been maintained. The current rate of crude production and refinery operation is higher than at the peak of wartime operation. I believe the estimates of probable sources of supply are reasonable and that the industry on a national basis is not faced with a shortage of basic raw materials.

"Some additional crude oil could be produced in the West Texas area if transportation facilities were available for movement to a market.

"The industry has adequate refining capacity to convert crude oil into finished products. The best estimate of current refinery capacity would be approximately 5,500,000 barrels per day. If the distribution of refinery capacity and crude oil supplies for these refineries were in keeping with the distribution of consumption there would probably be little question about the industry's ability to meet requirements. No such ideal condition exists. There are two serious problems confronting the industry. The first of these is the absence of adequate transportation facilities to move crude and products to their respective markets. Pipe lines into all probable shortage areas have been maintained at or near capacity for some time. Greater dependency will have to be placed on tank cars, truck transports, barges and coastal tankers than was experienced in 1946. The second major threat is loss of effective refinery capacity because of plant shutdowns. During the first six months of 1947, the Country has lost approximately 15,000,000 barrels of crude running capacity because of work stoppages.

"The oil industry has undertaken many costly and emergency steps to bring together crude supplies and refining capacity. Pipe lines are not only crowded to capacity but many expedients have been adopted to increase output. For example, finished and semi-finished gasolines are mixed with crude oil to reduce viscosity so that a more rapid flow of oil can be secured with the same facilities. This expedient has been adopted notwithstanding an additional refining cost at destination. Tank car movements of crude oil in large quantities for tremendous distances have been undertaken. Marginal or submarginal refining units have been placed in operation. Tankers and barges are operated at capacity as the industry has sought to bridge the gap between sources of supply and shortage areas. These steps have made possible crude runs at refineries in excess of 5,000,000 barrels per day during recent weeks. If the current rate of operation can be maintained and if demand takes the pattern foreseen, the supply of refined petroleum products should show evidence of improving.



Barge facilities *on the Mississippi are being operated at 100% of capacity.*

"This discussion assumes that there will be no phenomenal increase of fuel demand thrown on the oil industry by serious shortages of other fuels, such as coal and natural gas.

"Now let us consider briefly the situation in the Midwest. I refer to that section of the Country previously encompassed in PAW District Two, from Tennessee and Oklahoma on the south, and from the western border of Pennsylvania to the Rocky Mountain States. Please observe that the area described does not include the Rocky Mountain States. Crude production in that area has increased and refinery capacity is being increased. There appears no current justification of anticipating a local demand in excess of availability. It is the Midwest area proper where the growth of demand and facilities for meeting this demand are most out of balance. I shall try to catalogue briefly the causes which have given rise to this problem.

1. Local production of crude oil in the Midwest in the closing months of 1941 exceeded 1,200,000 barrels daily. At the present time, production in these same states is approximately 950,000 barrels per day. Therefore, to meet the same market requirements today would necessitate transporting into the area 250,000 barrels per day from other crude producing regions.

2. The petroleum industry in the Midwest during the war did not participate in construction of pipe lines and refineries to the same extent as characterized coastal areas. This was a direct resultant of comparative steel efficiency ratios in contributing to the world shortage of transportation facilities. The termination of the war found the Midwestern portion of the oil industry facing the future with reduced local crude and primarily 1940 facilities.

3. The Midwestern market has experienced a most phenomenal increase of demand for petroleum products. Mechanization of farms continued througout the war because of the dire need for food and the shortage of manpower. The farm market has continued to expand since the war, stimulated by increased availability of labor-saving devices, high farm income, and a general high level of purchasing power available to the farmer. The off-the-highway consumption of gasoline,

(*Continued on page 112*)

Mail It Right

Correct Addresses and Good Timing Is Smart Business

by
Al M. Schaefer

CARELESSLY, WHILE WRITING out the first-of-the-month bills to their charge-account customers, a fueloil dealer's bookkeeper recently addressed Home Owner John B. Doe's statement to 319 Tudor Street instead of 315. The postman (a substitute who was unfamiliar with that route) delivered it to 319. No blame could be put on him for what followed.

Unhappily 319-315 were next door to each other in everything but neighborliness. And more fuel was added to the flames that afternoon when Mrs. Doe was handed the slit-open fueloil bill by her neighbor's youngster, with this explanation:

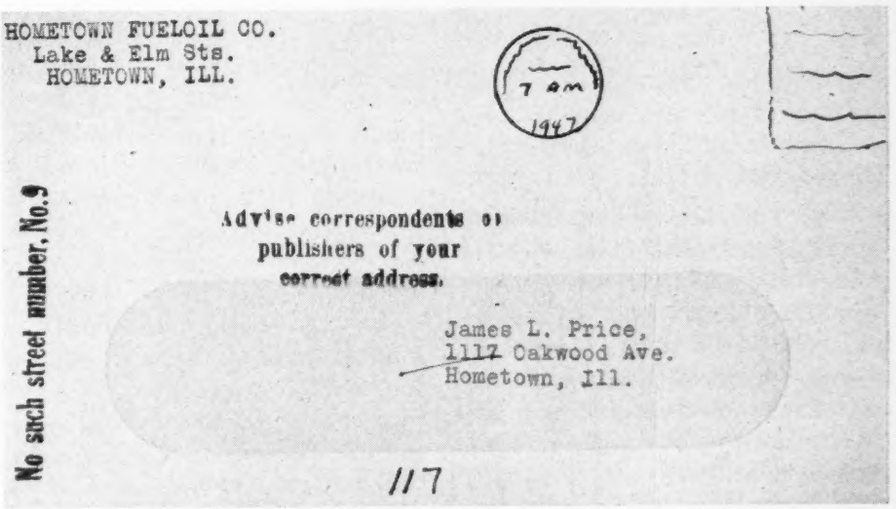
"My mother says this was sent to our house by mistake, and she opened it before she noticed it wasn't ours."

Mrs. Doe was furious. She immediately telephoned her fueloil dealer—and that dealer lost a customer.

True, not all wrongly addressed bills result so disastrously for the fueloil dealer, but experience proves that *any* incorrectly addressed bill is potentially bad business for the dealer who sends it.

Many times during the writer's 23 years as a letter carrier on the same residential route he has had to rubber-stamp "No such street number" or "Not there" on a bill, which was then delayed while a directory clerk looked up the correct address and pencilled it on the envelope, then re-sorted it to the proper route. He has had to deliver bills, marked-up similarly by other carriers, to patrons on his own route. The disfigured bill aggravates your customers! Even a misaddressed bill that is delivered promptly and without defacement (as the older regular postmen are able to do with most of them) irks the customer with its inaccuracy. He resents, also, seeing his name misspelled or errors in his initials.

The only solution to the ever-present danger is—accuracy. Your delivery truck drivers must be careful in making out delivery slips; your bookkeeper should make correct entries, and after addressing a bill she should check it with her entry for possible mistakes. (The company from whom we buy our home fueloil is highly aware of this necessity for correct mailing. After the bookkeeper has completed her task of writing out all the bills, another employee checks every bill *again* for errors in name, address, initials, and spelling.)



Careless mailing *aggravates customers, and may lead to loss of business.*

There's a "Best" Time To Mail Bills

Next in importance to addressing your bills 100% correctly is the mailing of them *immediately* after the close of the month's business.

The obvious reason is that often your customer's budget is strained by first-of-the-month bills; he hasn't enough money to meet *all* incoming bills promptly. Result: first come, first paid. Bills received after his purse is empty are forced to wait for payment. Then, too, some householders like to pay all bills at one sitting; they'll wait until the 5th or 6th of the month, and write checks for every bill received up to that time—and hold straggler bills for payment the following month.

One on-his-toes local dealer, who gets his bills out fast, "times" his mailings occasionally. He mails their statements so his customers receive them on the first Friday of the month—providing that day isn't later than the 4th. He has discovered that bills received on an early-in-the-month week-end are very likely to be paid that same Saturday as most husbands are home at least a half-day on Saturday, and some the entire day. A just-received bill is fresh in his mind, and in many homes Mr. Customer will say to his wife:

"I've got to go to the bank. (Or, I've got some shopping to do.) I'll stop in and pay this fueloil bill while I'm in the business district."

How To "Beat" a Deadbeat

Once in a while a fueloil dealer is deliberately cheated by a customer who runs up a big bill—then moves away without paying it. You send bill after bill, the postoffice forwards them to his new address, but they are ignored. You'd like to sic a collector on him—if only you knew where he had moved.

You *can* find out, providing he left a forwarding address with the postoffice. (No, the postoffice won't *give* the information to you, but you can use its facilities to get it.)

Simply address the bill (don't use an open-faced window envelope) to the ad-

dress on your books. Send the letter registered mail; request a return receipt to be signed *only* by the addressee, and requesting on it, also, the address where it is delivered.

The total fee for this combined service is 74 cents. It gets the present address of the deadbeat, and the return receipt will be received in the courts as prima facie evidence of delivery of the bill to him.

◈

British Call A Halt To Oil Conversions

ALTHOUGH THE BRITISH press continues to cite instances of conversions to oil—as, for instance, the conversion of Forster's Glass Company—the Government has now intimated that the policy is to be halted, and that only exceptional new cases will be considered, according to British correspondents.

Bottleneck of the situation is the capacity to produce the necessary equipment to permit oil fuel utilization. There is also a definite limit to the conversion of certain plants on technical grounds.

In some instances conversion has also been delayed for some considerable time by the lack of essential components and especially electric motors, delivery of which is taking some two years.

Official policy was outlined in the Commons by the Minister of Fuel and Power when he said that the Government had decided against any further general extension of schemes for conversion by industry from coal to oilburning.

Present plans are for a consumption of fueloil conversion projects at the rate of 6,000,000 tons a year, resulting in an annual saving of 10,000,000 tons of coal, by the calendar year 1949.

The Minister added that in his previous statement he had explained that the annual rate of oil consumption represented by conversions already approved would be increased to five million tons a year, equivalent to an annual saving of coal of eight million tons by the middle of 1948. The Government has reviewed this programme and had now decided against any further extension of it for the time being, although the matter would be discussed again when coal output would be more clearly established.

Arrangements will however be made to import another one million tons oil a year to provide in appropriate cases for applications that were now awaiting consideration. When these cases have been met there will be some margin for special cases where it can be shown that the amount of coal saved will be exceptionally high in proportion to the amount of oil burnt. No other new applications will be accepted.

The import of the additional one million tons will not begin to be available however until the third quarter of 1948 but it was not anticipated that most of the firms, whose applications might now be authorized, will be able to complete conversion before that quarter, although any case where earlier conversion were possible would be given special consideration.

Unless it is decided in the autumn to increase the whole programme the consumption of fuel oil on coal-oil conversion projects will attain a rate of six million tons a year and will result in annual saving of 10 million tons of coal by the calendar year 1949.

A Ministry of Fuel Statement on the subject indicates—"Notwithstanding the importance of saving coal conversion schemes have also to be compared with other desirable projects for which manpower and materials are short. Every additional million tons of oil a year used in substitution for coal involves the provision of about 25,000 tons of steel for installations and transport facilities in this country, as well as a recurrent expenditure of 20,000 tons of steel a year for production and refining operations overseas."

◈

Ask Mass Production Of British Spaceheaters

MASS PRODUCTION of a simple and efficient domestic oilheater to save coal and ease the prospective demand for domestic heating this winter is urged by the Parliamentary Scientific Committee. Problem facing Britain this winter is that 3 million of the 10 million electric fires in use in the country are switched on simultaneously immediately weather conditions deteriorate. Immediate mass production of hundreds of thousands of domestic oilheaters would do much to reduce the demand for current which has a consequent effect on industrial concerns using the same circuits as domestic users. Attractive as the theory of this proposal is, the actual manufacture of a major number of stoves, running into millions, demands a concentration of steel, manufacturing space and labor which do not appear to be available at this time. There is also the fact that the Government has already indicated that it is coming to the end of its available oil reserves for industrial purposes and that no further conversions to oil, for industrial purposes can be contemplated. Undoubtedly a major use will be made of oil for domestic heating this winter but policy advocated by the Committee is long term rather than short term, and British need for winter heating is essentially a short term need.

◈

Canadian Oil Price Up

FOLLOWING CLOSELY an announced increase in the price of soft coal, Imperial Oil Co., Ltd., has announced that the price of furnace oils would rise two cents a gallon with stove oils up 1¾ to 2½ cents.

The new increase will bring the furnace oil price in Montreal to 13½ cents a gallon. Also announced was a boost of 22 to 49 cents for each 35-gallon barrel of heavy industrial fuel oils.

Factors that bring about the price increases are continuing high costs for crude oil which had not been wholly reflected in prices, and rising costs for finished products which must be imported because of unprecendented demand.

Because of short supply and greater world wide requirements, products must be bought whenever and wherever possible. This entails storage over longer than normal periods and in many cases products must now be imported and stored at points distant from where consumed.

The Imperial Oil Company is at present building steel tankage for an additional 140,000,000 gallons, principally in the provinces of Quebec, Ontario and British Columbia.

Local city prices for furnace oil will be as follows: Halifax, 13 cents; Montreal, 13½ cents; Toronto, 13¾ cents; Winnipeg, 17½ cents; Regina, 14½ cents; Calgary, 14½ cents and Vancouver 12-4/5 cents.

New prices for stove oils are: Halifax, 16 cents; Montreal, 16¾ cents; Toronto, 16¾ cents; Winnipeg, 19 cents; Regina, 16 cents; Calgary, 16 cents; Vancouver, 16 cents.

Draft and Oilheating

Chimneys and Flues Have Great Effect on Equipment Operation

by
Rudolf Ulrich*

CHIMNEY DRAFT AFFECTS the operation of the oilheating equipment you sell and service. If you fight poor draft it works against you like an unseen devil. But when you get to know draft, it is a friendly thing ready to work wonders for you.

Draft in a boiler or furnace, while not a direct index of combustion efficiency, has a definite bearing on efficient burner operation. The intensity of draft determines the rate at which the combustion gases pass through the boiler or furnace. The intensity of draft also governs, to a considerable extent, the amount of air supplied for combustion. Excess draft, therefore, will adversely affect burner efficiency in two ways: by increasing the temperature of the flue gases as a result of the rapid passage of the combustion gases through the furnace, and by reducing the CO_2 content of the flue gases as a result of an unnecessary excess of air being drawn into the furnace.

Experienced burner dealers know that a quick check-up on the draft is often all that is needed to spot the trouble on those irritating service calls. A recent survey of heating difficulties indicated that a large percentage of all service calls could be eliminated if the draft were carefully checked and adjusted at the time of installation of the heating plant.

Draft Principles

Fig. 1 illustrates the principles of chimney draft. Draft depends on filling a leak-proof chimney with hot gases. The hot flue gases (say, 400 to 700° F) flow upwards because they weigh less than a corresponding column of air at 0 to 70° F. atmospheric temperatures. The relative lightness of the hot gases gives a forced upward flow in the chimney; a flow as positive and dependable as that produced by a blower. Make proper use of this natural force, and the boiler or furnace operates with a definite suction on its smokehood, to suck products of combustion from it. Efficient oil-heating depends on this suction on the smokehood.

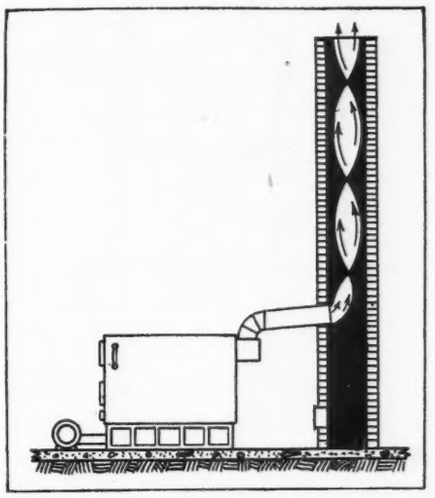


Fig. 1

Fig. 2 shows additional principles. Flue No. 2 might be satisfactory otherwise, but it will not give good draft if a cold flue in the same chimney is connected to it at the bottom, or if cold air enters it, as at point 3 in the sketch.

Cold air flowing into a chimney cuts draft in two ways. First, it permits the suction to be satisfied at points besides the smokehood, thus reducing the smokehood suction. Second, it lowers the temperature of the chimney gases, making them heavier and less eager to flow upwards.

It is important to distinguish clearly between the intensity of the draft and the volume of the draft. The former determines the correct height and the latter the correct area of the chimney.

Chimney Requirements

Rarely does the furnace installer have control of chimney construction, except on new jobs. But where he has a finger in it, he can see to it that the chimney is built straight and tight, and as large as the boiler manufacturer recommends. On some old jobs, the heating contractor may have to demand that the home owner improve the chimney. Of course, he must know a good deal about chimneys to have a leg to stand on in explaining his findings. But according to field experience, on about 98 out of 100 jobs, having draft trouble, you can do something about it without rebuilding the chimney.

Rarely are chimneys in topnotch shape unless the heating contractor moves to put them so. One dealer finds that on three out of four jobs he can jack up draft 25% to 100%, if he needs to, by cleaning smokepipes and chimneys, and sealing air leaks in them. The American Society of Heating and Ventilating Engineers recommends the following simple method of testing a chimney flue for tightness: "With a good fire in the boiler or furnace, or in the base of the chimney, put about a square yard of tar paper on the fire. As soon as smoke appears at the top of the chimney close the top of the flue with a piece of old carpet or wet newspapers held down by a weighted board. Keep

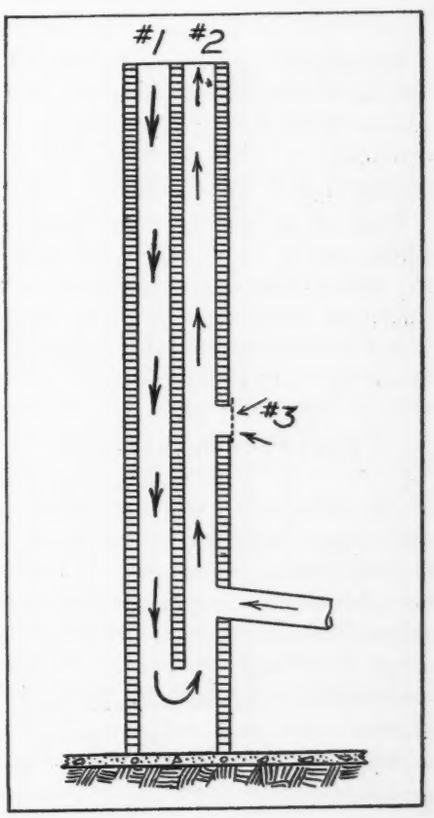


Fig. 2

*Vice President, Bacharach Industrial Instrument Co.

the tar paper burning in the firepot for five minutes. If during this period no smoke comes through the sides, the chimney can be considered as smoke tight."

The flue connection from the smoke outlet of the heater to the chimney should be as short and direct as possible, and should not be less than the diameter of the smoke outlet. Elbows have an important effect on draft; therefore, 45° or 60° elbows are preferable to 90° bends. The smokepipe should rise toward the chimney and should not project beyond the inner wall of the flue.

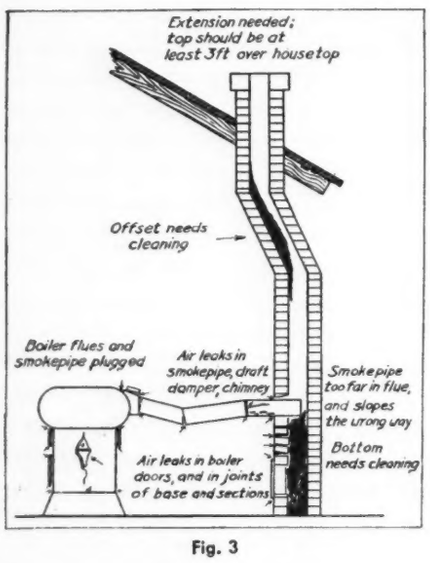

Extension needed; top should be at least 3ft over housetop
Offset needs cleaning
Boiler flues and smokepipe plugged
Air leaks in smokepipe, draft damper, chimney
Smokepipe too far in flue, and slopes the wrong way
Bottom needs cleaning
Air leaks in boiler doors, and in joints of base and sections

Fig. 3

Occasionally a manufacturer announces that his oil-fired units work well without chimneys; but this does not mean that these units will not be crippled by hooking them to grossly defective stacks.

Some of the more common chimney troubles are shown in Fig. 3. In a chimney that is clean and of proper size and height, troubles usually are due to offsets built into the chimney or due to air leaks caused by improper mason work.

Forced and Natural Draft

Depending on whether the burner receives its air by a blower or by the draft of the chimney, we speak of a forced draft burner or a natural draft burner. An example of a natural draft installation is the direct-fired water heater using a range burner shown in Fig. 4. The house-heating boiler using a gun-type burner shown in Fig. 5, is a typical forced draft installation. In each boiler, gases naturally flow upwards because the boiler is filled

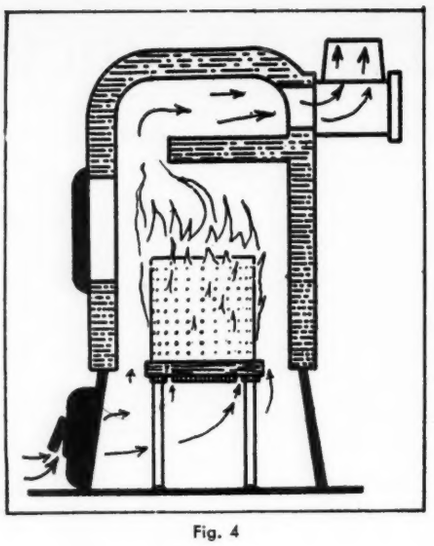


Fig. 4

with hot gases, hence serves as miniature stack. True, boilers are low compared to chimneys, but their average gas temperatures run much higher than typical chimney temperatures.

Both draft systems are used in different types of heating systems and each has its place. Natural draft systems are less costly and accomplish the same results as forced draft if proper drafts are available.

Natural Draft Oilburner: If a natural draft oilburner is operated without additional smokepipe and chimney, the rate of air flow produced by the heater itself limits its maximum firing rate. Feed more oil than the air rate permits, and you get incomplete burning, smoke and soot. Up to certain limits, the air flow will increase as the fire size is increased because a higher oil rate gives higher furnace temperatures. However, to burn the amount of oil needed to carry the load, you might need a smokepipe and chimney to provide a greater air flow. A good chimney will put a suction on the smokehood, and permit a higher burning rate. But a poor chimney may put a plus pressure on the smoke outlet of the heater and thereby decrease the capacity of the heater below what it is without any chimney.

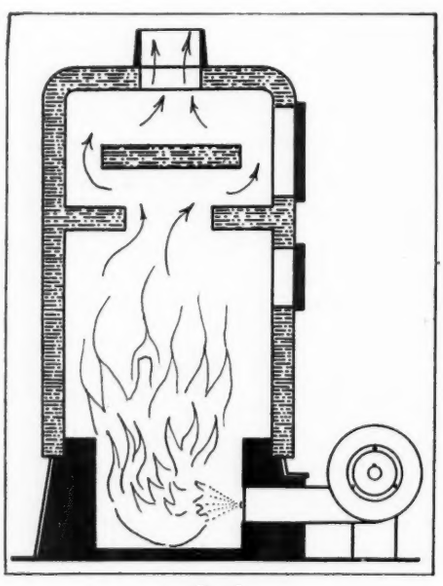


Fig. 5

Forced Draft Oilburner: With a gun type burner (Fig. 5) capacity is less dependent on chimney draft because the air required for combustion is supplied by a blower. But a poor chimney again will put a plus pressure on the smoke outlet and thereby reduce the amount of air the blower moves. Thus, while this burner might develop 97% as much capacity without a chimney as when hooked to a typical chimney, connecting it to an undersize flue, for example, might make it impossible to carry the load with a clean, silent fire.

With both natural and forced draft oilburners, chimney draft serves to keep a slight negative pressure on the entire boiler or furnace. This is important in preventing escape into the cellar of small amounts of soot and odor that are all but inevitable during cold starts. Pressure in boiler and furnace combustion chambers and flue passages drives products of combustion out of the small air leaks commonly found around cleanout and inspection doors and in joints of boilers and furnaces assembled on jobs.

Some boilers are different from those shown in the diagrams, in that a blower sucks the gases of combustion from the flue passes. This creates a suction in the combustion chamber and assists in keeping a negative pressure (draft) on the furnace. Such units occupy the middle ground between the preceding two. But they, too, operate best only with good chimney draft, because preventing easy outflow of the gases from the smokehood interferes with the flow of air through the blower and the combustion chamber.

Common Draft Difficulties

On any job, too low a draft reduces the capacity of the burner, causes incomplete combustion and leads to a noisy flame. On the other hand, too high a draft causes excessive amounts of air to go to the fire,

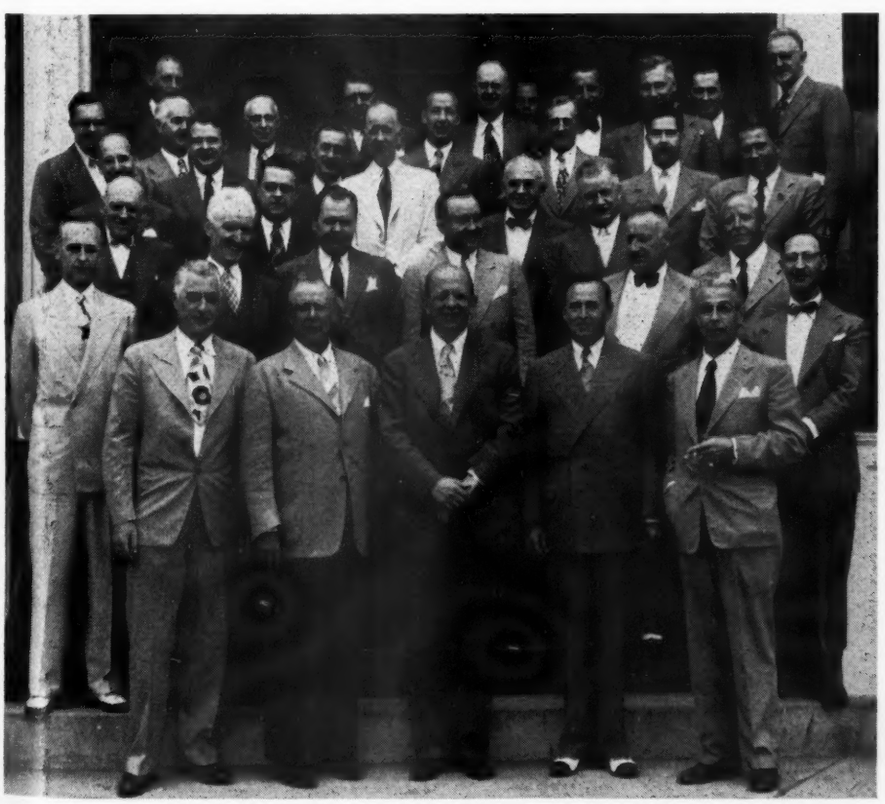
(*Continued on page 172*)

Reorganization, New Division Voted at OHI Directors Meeting

WHEN THE MUCH-PUBLICIZED shortage of oil transport and storage becomes so serious that manufacturers of automobiles and diesel engines are asked to curtail production and sales, the oilheating industry will take more seriously the pleas for restricted activity, President R. S. Bohn told the board of directors of Oil Heat Institute at Portsmouth, N. H., July 8. Though he predicted short supply in some spots during the next heating season, President Bohn pointed out that "making and selling oilburners is our business," and an industry cannot go out of business temporarily because its activity creates some problems for others. It is the petroleum industry's business to supply the products for which there is a demand, he said. There never has been a time when demand for all products was in perfect balance. Expansion of the market creates problems which the petroleum industry has solved in the past, and they will do it again, Mr. Bohn concluded.

In a session that ran almost continuously for a long day, directors of OHI accepted a recommendation of its Planning Committee, headed by A. T. Atwill, (Quaker) Chicago, that will reorganize Oil Heat Institute to provide vertical sections in each division, in which manufacturers and dealers interested in specific types of equipment or operations can meet to discuss and act on problems affecting only their lines. There will be no change in the corporate name or officers or staff. The change has been recommended to make the operation of the institute more effective for the membership.

In addition to the Manufacturer, Accessory and Distribution Divisions of OHI, a fourth division was voted to be known as the Technical Research Division. This division will be supported by contributions to a specific research program by major oil companies and others who are not eligible for membership in the other three divisions. Determination of the research program from year to year will be the responsibility of the Engineering Committee, and members of the Technical Research Division will be billed for their proportionate share of the research budget.



Directors *and guests at OHI's Portsmouth meeting.*

Carl Jonswold, *champion golfer of OHI Directors, poses with Al Atwill, (right) runner-up.*

Reporting on projects that should be undertaken by the OHI research laboratory, G. T. Kaufman, technical secretary, suggested (1) studies to develop a fuller understanding of oilburner operation so the designers could get away from cut-and-try methods supported by experience; (2) basic studies on operating efficiences to disclose factors that reduce oil consumption; (3) basic studies on burner head designs to establish standard air-oil mixture for best results in all types of oilburners; (4) studies of oil atomization, including photographic studies of spray patterns, and stroboscopic studies of what transpires during the travel of atomized oil through the combustion zone; (5) studies of ignition leading to better systems to ignite heavier oils, and (6) studies of the mechanics of combustion to find, for instance, how combustion gases are separated from the droplets of atomized oil, and what can be done to increase the speed of separation.

Managing Director Hess reported that work is progressing and members will soon receive notices that space sales are open for the Chicago oilheating show to be held the week of April 5, 1948. He also announced that committments had been made for Mechanics Hall in Boston for an oilheating show during the week of May, 1949. It was decided that the

(*Continued on page* 170)

Efficient Fireboxes Save Oil!

Design and Construction of Fireboxes for up to 15 Gph

by
J. W. Schulz

DESIGN and construction of the firebox are the most difficult parts of installing an oilburner properly. That was true years ago when gun type burners first were installed by the thousands, and it is still true today.

Twenty years ago, a certain dealer new in the oilburner business worked hard all summer singlehandedly and by the middle of August had sold 40 installations. He stopped selling burners then and went about fulfilling the contracts he had on hand. He easily planned his installation work.

First, a day laborer would dig the hole for the outside tank. The company selling the tanks would deliver the tank to each installation at the proper time for lowering it into the hole.

Second, to help the laborer lower the tank and to install the lines for suction, return, fill, and vent, a local plumbing and heating man would arrive on the job. He would do all the piping, including providing suction and return line connections at the proper place in front of the boiler or furnace.

Third, a local electrical contractor would do all the wiring, working to the usual wiring diagrams for burners and following the instructions which came with the oilburner controls.

Fourth, the day laborer or any handyman would clean up the entire installation, paint up the front of the boiler or furnace and the smokepipe, and in general tend to the good housekeeping chores that must be done to arrive at a "showroom" installation.

Fifth, the burner dealer himself would start up and tune up the burner. He would also attend to any service calls, if there were any.

Obtaining excellent prices for a well-known burner from monied owners of pretentious homes, and able to have work done by plumbers, electricians, and laborers, at specified, fair prices, according to his plan this burner dealer would profit nicely. Until he started installing the first six oilburners, he thought that his autumn season of installing the burners would be as pleasant for him as had been his summer season for selling the burners.

Then this dealer saw the big hole in his planning. He had nobody to plan and build the fireboxes. The first part, planning, was easily solved. With help from the burner manufacturer's representative at first, the dealer would plan the fireboxes. The second part did not work out as well. Neither the electrician nor the plumber knew anything about building fireboxes. The day laborer knew less. Desperate, the burner dealer hired a bricklayer to build the fireboxes, and in half a day found that this would not work. After spending three weeks trying to get someone interested in learning how to build good oilburner fireboxes, the dealer wound up building the fireboxes with his own hands. The best he could do was to use his laborer to hand him the firebrick, properly dipped in refractory cement, break a brick in half occasionally, and admire the fine fireboxes which were built. That dealer finished up his first 40 oilburner installations only by building the 40 fireboxes himself. Although he used old-style heavy firebrick, he declares today, they were the best fireboxes that anyone ever made of old-fashioned firebrick, and they were responsible for the dealer's earning the reputation from the start for doing only the best kind of oilburner work.

It was true 20 years ago and it is still true today that the piping of an oilburner installation can be completed nicely by

Firebox Dimensions

Gph rate	*Nozzle height*	*Side height*	*Rectangular firebox width*	*Rectangular firebox length*	*Round firebox diameter*
1.0	6	14	10	12	12
1.25 or 1.35	6	14	11	13	13
1.5	6½	16	11	14	13
1.65 or 1.75	6½	16	12	14	14
2.00	6½	16	13	16	16
2.50	7	16	14	18	18
3.00	7	18	16	20	20
4.00	7½	18	18	21	23
5.00	7½	18	20	22	26
6.00	7½	18	20	26	28
7.00	7½	18	20	30	30
8.00	8	18*	22	31	32
9.00	8	18*	24	32	34
10	9	20*	24	34	35
11	9	20*	26	36	..
12	10	20*	26	40	..
13	10	20*	28	40	..
14	11	20*	28	43	..
15	12	20*	28	46	..

Notes: For firing rates above 7.00 gph, make the side walls 4" to 6" higher than the bottom of the waterleg of the boiler, to protect the mud leg of the boiler from excessive heat. Make the back wall of the firebox considerably higher than the side walls (at least 8" higher for 8.00 gph, and 12" higher for 15 gph). Build the upper part of the back wall with a pronounced corbel so that it extends over the fire, and step up the side walls at the back of the firebox to bring them to the level of the top of the back wall.

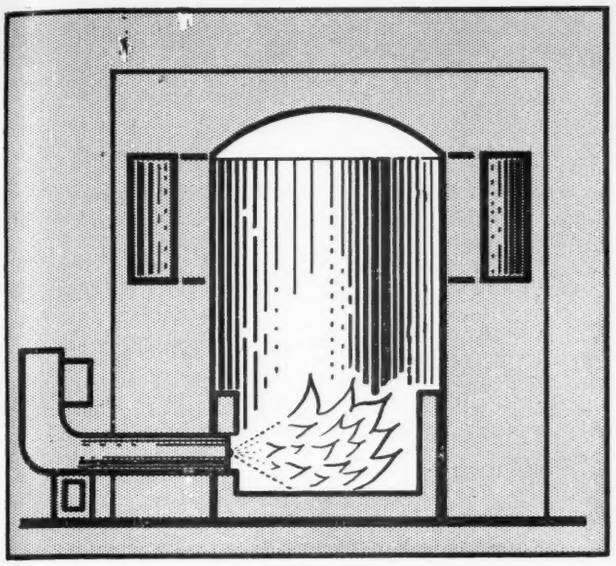
All dimensions are in inches.

The nozzle heights and side wall heights are measured not from basement floors but from the refractory floors of the fireboxes.

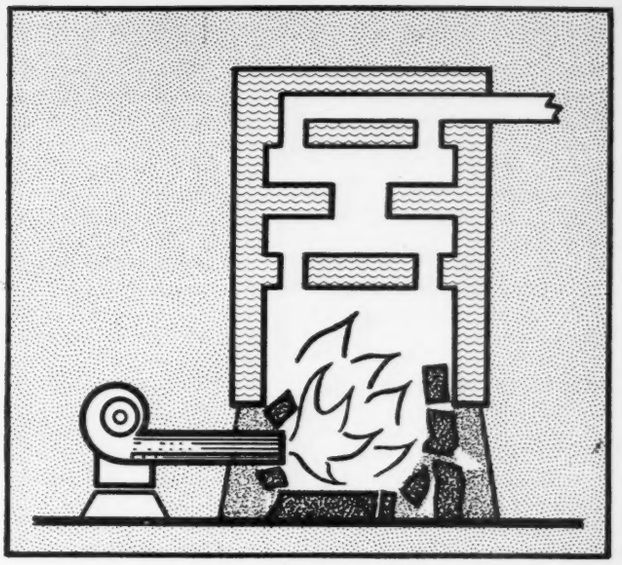
The lengths and widths of the rectangular fireboxes, and the diameters of round fireboxes are measured inside the fireboxes.

It is best to be extremely cautious, in the manner outlined in the article, when planning for the first time a large firebox for a certain make and model oil burner. Otherwise the flames given by certain burners may not fit the firebox shapes properly, and highly unsatisfactory operation may be the result.

Every oil burner dealer should make a high point of obtaining detailed instructions for building fireboxes from the manufacturer of the burner which the dealer handles. Only combustion experts who have years of experience in firebox design and refractory material problems, and who have full authorization and responsibility for doing development work, should deviate from the instructions.



Error #1. Making the firebox too large or too small. THE OVERSIZE FIREBOX IN THIS WARM AIR FURNACE HAD TO BE REPLACED TO ARRIVE AT REDUCED OIL BILLS AND CLEAN BURNING. USUALLY A TINKERER DOES NOT FIGURE GPH RATES BEFOREHAND, BUT INSTALLS FIREBOXES "TO PLAY SAFE." BECAUSE OF SUCH BLUNDERING, THE OIL CONSUMPTION OF MANY INSTALLATIONS IS 50% HIGHER THAN IT SHOULD BE.



Error #2. Building a firebox which will not stand up. EARLY FAILURE OF THE FIREBOX COMES OF USING THE CHEAPEST FIREBOX MATERIAL OBTAINABLE. THE BEST MATERIAL SERVES FOR YEARS ONLY WHEN PROPERLY INSTALLED. BECAUSE OF POOR MATERIAL AND SHODDY WORKMANSHIP, IN SOME CITIES NEW FIREBOXES ARE NEEDED FOR HALF THE BURNER INSTALLATIONS MORE THAN FIVE YEARS OLD. DETERIORATED FIREBOXES WASTE CONSIDERABLE FUELOIL.

any good pipefitter. Good piping is neat, ship-shape, and free from leaks. It cannot be made any better to save oil, quiet the burner, or give cleaner, brighter burning. Also, it is still true today that the wiring of any oilburner installation can be completed nicely by any well-qualified electrician. He follows the wiring diagram for the job and observes all the rules and regulations for electric wiring. He produces wiring which is neat, ship-shape, and which has tight connections but lacks short-circuits. But like the oil piping, a good job of wiring cannot be made any better to save oil, quiet the burner, or give cleaner, brighter burning.

In the design and construction of the firebox lie all the possibilities for installing a given gun-type burner in a manner which will cause that particular burner to operate unusually well. Today there is room for improvement in fireboxes, since in general the fireboxes being installed with gun-type burners fall far short of doing as well as can be done. A burner dealer determined to provide exceptional results for his customers can realize his ambition by getting down to brass tacks and making certain that every one of his installations has the best firebox that can be built. Where a superior firebox gives a flame which is 25% better, the whole burner installation is 25% better. And doing an especially good job of designing and building the firebox does save 10% to 35% of the oil that would be used otherwise, besides giving quieter combustion, and cleaner, brighter burning.

Any dealer who dares can make a check-up easily and quickly on the kind of fireboxes he provided for the last ten burners he installed. First, assume this dealer is handling a well-engineered gun-type burner, with the excellent air-handling parts and excellent atomization that make it possible to show 10% to 12% CO_2 on an actual installation. To check up on the quality of the fireboxes he has been installing, the dealer need only find out the maximum CO_2 reading obtainable on each of his last ten installations together with bright, clean combustion and no trace of chimney smoke. Recently after years of telling the public that he offered only the best in oilheating installations, the owner of a large fueloil and oilburner organization decided to find out at first-hand how well his burners really performed. He knew that CO_2 readings, taken with the flames adjusted to be bright and clean, would tell the story numerically. Readings of 8% CO_2 would just pass. 10% would indicate his burners were better than his competitors, he reasoned, while 12% could be classed in his mind as just about perfect. Watching an engineer test 25 burners in one week produced no data for the sales department. Six of the new installations showed less than 5% CO_2; 14 showed less than 8% CO_2; 21 showed less than 10% CO_2; and 24 showed less than 11% CO_2. The owner of the company concluded that readings of 10% CO_2 and higher were being obtained by his men by accident, not by design. As closely as could be estimated, this company's new installations were using 20% to 30% more oil in general than should have been used. Certain installations, the poorest, were using 50% too much oil simply because of (a) poor firebox design and construction, and (b) poor adjustment.

To make certain he is not producing inferior fireboxes which waste fueloil and give the other evils of poor combustion, a dealer may check on these points which relate to the errors most frequently encountered:

1. The firebox must be of the proper size to be highly efficient. It must not be too big or too small for best results on the particular installation.

(The proper gph rate for an installation must be computed carefully, of course, before a decision is made regarding the fire-

box size. The previous article in this series, gave instructions on nine methods for figuring gph rates.)

2. The firebox must be built of high-quality material which will not deteriorate within a few years. Firebox deterioration wastes oil and gives the burner owner the heavy expense of repairing or replacing the firebox. Of course, the dealers who build the best fireboxes, which produce maximum efficiencies by reaching cherry-red-hot temperatures quickly after the burners start, have a greater problem in the selection of proper firebox materials than dealers whose fireboxes operate relatively cool.

3. Complete the firebox by installing around it some kind of proper back-fill material, suitable for the temperatures encountered, hence likely to be in place in five years.

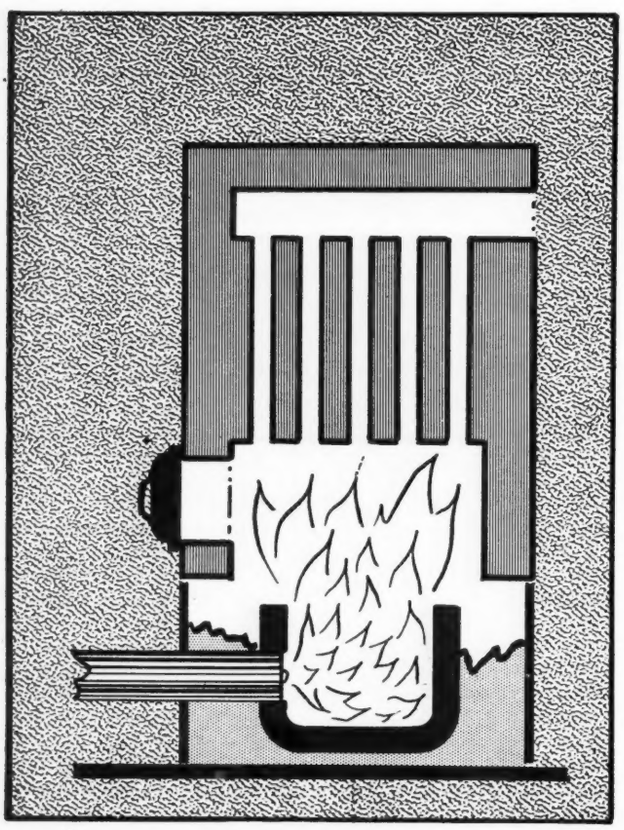
4. Avoid the low firebox side walls which make it impossible to obtain good CO_2 readings and clean combustion on many installations.

The accompanying table gives firebox dimensions for from 1.0 to 1.5 gph. While these are suitable for many typical gun-type burners, they do not match the requirements of every burner model, therefore great care should be used in applying the table. Special care is needed for fireboxes for firing rates above 5.0 gph. Different dimensions than those in the table may be necessary because of (a) the dimensions of the base of the furnace or boiler, or (b) the flame shape which the oilburner model gives together with maximum combustion efficiency.

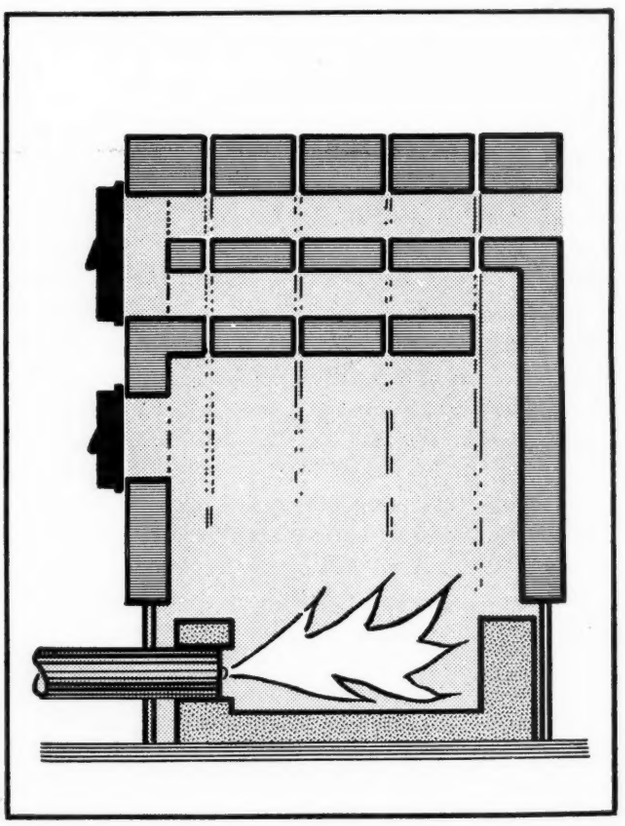
This procedure is used to find out the firebox length and width to use where a firebox of the width and length listed in the table cannot be used. Find out from the table how many square inches of firebox floor are provided, at the given firing rate, for each gph. For example, for 10 gph the firebox floor should be 24" x 34" according to the table. This provides 816 sq. in. (24 x 34 = 816) for 10 gph, or 81.6 per gph. If you desire to use a different width or length for 10 gph, provide 81.6 sq. in. of firebox floor per gph also, or provide 816 sq. in. for the 10 gph firing rate.

The figures in the table come from studying closely the results, in laboratories and the field, of firing several thousand typical gun-type burners. These figures were not obtained on a purely mathematical basis, but from actual firing tests, therefore they do not check through exactly on a purely mathematical basis of comparing, for each listed gph rate, the number of square inches of firebox floor provided per gph.

(*Continued on page* 164)



Error #3. Failing to install proper back-fill. THE MEN THOUGHT THEY HAD INSTALLED PROPER BACK-FILL AROUND THE FIREBOX OF THIS HARD-FIRED BOILER. BUT IN LESS THAN A YEAR THE BACK-FILL SAGGED, THE BOILER BASE WAS RUINED BY RED-HEAT, AND THE BOILER DROPPED TO THE FLOOR. USUALLY, HOWEVER, LESS SPECTACULAR TROUBLE COMES OF FAILING TO INSTALL PROPER BACK-FILL. POOR BACK-FILL USUALLY ONLY CUTS SHORT THE LIFE OF THE FIREBOX, REDUCES THE EFFICIENCY AT WHICH THE OIL IS BURNED, INCREASES FLAME SOUNDS, AND CAUSES INCOMPLETE COMBUSTION.



Error #4. Making firebox walls too low. ESPECIALLY WITH FUELOILS WHICH ARE DIFFICULT TO BURN CLEAN, FIREBOXES WHICH BECOME CHERRY RED-HOT ARE NEEDED. LOW SIDE WALLS SAVE LABOR AND MATERIAL, BUT GIVE COOL, DIRTY, WASTEFUL COMBUSTION. FIRED 8.0 GPH, THIS BOILER HAD A FIREBOX WITH SIDE WALLS ONLY 14" HIGH. CONTINUOUS BURNER OPERATION ON ZERO MORNINGS RAISED NO STEAM PRESSURE, LEFT MANY RADIATORS STONE-COLD. A FIREBOX WITH SIDE WALLS 6" HIGHER WAS INSTALLED, AND 30 MINUTES OF BURNER OPERATION GAVE TWO POUNDS STEAM PRESSURE.

A single unified control system for furnaces fired with vaporizing pot type burners
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1 ***Time proven "Detroit" CRC-239 Float Valve of either the CRC-239 FF, CRC-239 FH or CRC-239 FN Types.***

a. The CRC-239 FF provides two-speed control of draft motor.

b. The CRC-239 FH provides forced draft on high fire, natural draft on low fire.

c. The CRC-239 FN is designed either for natural draft burners or continuous forced draft.

The CRC-239 FF and CRC-239 FH afford a predetermined post-draft period, after room thermostat is satisfied, to properly burn any excess fuel which may accumulate in the burner during high fire cycle. This is one of the outstanding features of "Detroit" electrically operated Float Valves.

2 ***Remote bulb Blower and Limit Control with integral "summer" setting for controlling air conditioning fan.***

a. Blower range fully adjustable from 100° to 180°, with easily read scale calibrated in degrees. Differential fixed at 25°.

b. Limit control cuts fuel delivery to pilot at customer's desired temperature, (non-adjustable).

The CRC-239 Furnace Master affords the furnace manufacturer an easily applied unit with all the necessary internal wiring completed in the Detroit Lubricator factory. When furnace is installed in the field, only two lines need be run by installer—115 volt supply and low voltage thermostat cable. No maze of wires and outlet boxes—no improperly wired jobs—faster—neater—more economical.

All parts are instantly accessible for cleaning and service. Metering stem and inlet needle can be cleaned without disturbing wiring.

The compactness, the neatness and eye appeal of the "Furnace Master" will help in the sale of your furnaces; the time and money saved in the installation will appeal to your dealer organization. A heating plant controlled by the "Furnace Master" will provide health and comfort to the home owner.

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Mid-Western Fueloil Rations

DOMESTIC fueloil rations issued during the last war year were shown by OPA districts and regions in the February issue, followed by a county break-down for New England in the April issue, and for the Middle Atlantic states in May. We have now completed a county analysis of domestic rations in the other fueloil rationed areas, and will present the country figures on residential central heating and space heating as space allows.

The table shows county figures; for individual board data, write the magazine.

Only the domestic heating rations are shown in the table, those identified by Form R-1100, separated into central heating and space heating. As was explained in detail in the February issue, a lot of burners have been installed in these areas since the ration date. To bring the figures up to a point of January 1, 1947, add about 33.2%.

The actual number of distillate oil-burners operating in any county is somewhat above these figures, because often a typical domestic type burner is installed in a small store or perhaps a four-family flat, and it will be recalled that rations for such buildings were issued under R-1101, rather than the private dwelling ration.

Domestic Fueloil Rations by Counties

MID WESTERN STATES

	R-1100 Central		R-1100 Space	
	Number Issued	*Average Gallons*	*Number Issued*	*Average Gallons*
ILLINOIS				
Chicago District				
Cook (Chicago)	24,669	1654.8	134,232	569.0
Cook (outside Chicago)	19,822	1804.4	19,117	495.1
Du Page	2,946	1589.8	3,151	512.8
Kane	1,778	1499.4	1,750	506.9
McHenry	914	1631.1	2,062	567.8
Lake	5,199	1925.4	5,903	426.9
Moline District				
Boone	301	1327.3	337	631.3
Carroll	153	1506.7	851	704.9
De Kalb	641	1565.1	1,180	553.5
Hancock	171	1407.6	489	474.5
Henderson	22	1384.1	312	542.0
Henry	234	1567.8	469	546.9
Jo Daviess	217	1075.2	1,167	542.9
Lee	373	1529.2	348	522.1
Mercer	104	1558.0	370	693.2
Ogle	516	1211.7	857	659.4
Rock Island	1,424	1391.8	2,366	517.0
Stephenson	653	1359.8	885	525.0
Whiteside	987	1376.0	2,254	478.1
Winnebago	1,833	1547.3	2,752	480.8
Peoria District				
Bureau	386	1399.6	643	515.6
Ford	139	1470.9	270	524.9
Fulton	90	1353.3	348	329.9
Grundy	127	1447.8	452	493.4
Iroquois	189	1456.1	577	466.9
Kankakee	278	1445.3	1,116	421.6
Kendall	120	1247.6	315	512.0
Knox	294	1238.8	361	412.8
La Salle	698	1389.9	1,211	460.9
Livingston	231	1387.0	670	421.5
Marshall	112	1321.2	209	331.9
Mason	63	964.4	143	477.0
McDonough	263	1291.4	327	454.3
McLean	850	1425.3	810	492.7
Peoria	322	1425.3	1,030	373.2
Putnam	9	1455.6	89	486.4
Stark	100	1341.9	115	502.3
Tazewell	210	1159.8	748	463.4
Warren	140	1310.9	413	385.7
Will	671	1505.3	2,691	518.8
Woodford	167	1588.6	263	444.6
Springfield District				
Adams	145	1495.4	971	419.6
Alexander	47	955.9	174	196.9
Bond	29	1608.6	69	231.1
Brown	16	1487.5	68	165.1
Calhoun	3	355.7	30	283.1
Cass	31	1322.6	88	334.8
Champaign	612	1319.3	1,194	448.0
Christian	53	1225.5	349	441.9
Clark	19	1178.9	139	367.9
Clay	63	1934.5	254	289.4
Clinton	31	1548.4	256	334.7
Coles	114	1366.6	475	382.9
Crawford	21	1269.8	96	411.5
Cumberland	6	1263.3	70	369.1
De Witt	181	1249.3	326	486.2
Douglas	112	1383.8	295	583.9
Edgar	34	1852.9	131	463.5
Edwards	2	1115.0	94	309.2
Effingham	36	1117.8	133	393.0
Fayette	35	1135.9	86	365.6
Franklin	6	788.3	160	215.5
Gallatin	0	0	0	0
Greene	125	1072.6	27	698.0
Hamilton	7	1741.4	99	301.9
Harden	1	1450.0	33	336.5
Jackson	10	1061.0	179	167.7
Jasper	29	991.2	100	327.6
Jefferson	88	1133.2	135	456.1
Jersey	42	1440.0	121	372.4
Johnson	1	1400.0	19	304.7
Lawrence	20	1440.0	153	215.5
Logan	81	1440.9	324	391.3
Macon	251	1515.9	1,065	414.9
Macaupin	72	1255.8	292	310.9
Madison	504	1432.6	2,125	323.9
Marion	138	1048.6	859	353.0
Massac	0	0	54	182.5
Menard	51	1535.3	108	471.2
Monroe	42	1442.1	335	293.1
Montgomery	49	1244.3	188	426.7
Morgan	86	1301.4	213	401.0
Moultrie	37	1483.0	197	395.1
Perry	14	1095.3	44	234.7
Piatt	99	1553.8	300	551.6
Pike	26	1264.6	168	499.9
Pope	0	0	0	0
Pulaski	4	1069.0	71	188.0
Randolph	43	1415.1	193	270.2
Richland	120	361.8	157	353.7
Saline	1	1550.0	101	224.1
Sangamon	368	1471.6	769	382.5
Schuyler	6	1209.8	34	254.9
Scott	9	1538.9	43	412.9
Shelby	70	1365.2	416	443.2
St. Clair	825	1227.1	2,780	257.0
Union	30	679.0	23	192.2
Vermilion	179	1674.0	442	390.7
Wabash	23	1020.4	143	339.4
Washington	21	1024.8	160	295.1
Wayne	79	547.5	35	270.4
White	18	1533.6	92	378.9
Williamson	9	911.1	188	123.1
ILLINOIS TOTAL	78,586	1623.2	226,047	532.2
INDIANA				
Indianapolis District				
Adams	36	1382.2	281	441.5
Allen	1,410	1389.7	2,081	524.2

(*Continued on next page*)

MORE IMPORTANT THAN EVER...

"all oil burners make heat, but--

SILENT GLOW **Air Seel** conserves the heat it makes"

Today the oil burner that conserves heat . . . saves fuel has undeniable sales advantages. Dealers who sell Silent Glow Air-Seel are finding this to be true . . . find that an easy, dramatic demonstration is proving the point beyond any question of doubt . . . is turning thousands of prospects into customers. Are you sharing this profitable business? The Silent Glow Oil Burner Corporation, Hartford 6, Connecticut.

Back of every Silent Glow product is our experience and reputation established nearly a quarter of a century ago. Radio and publication advertising is carrying the Silent Glow story into millions of American homes.

Those Who Know Choose

SILENT GLOW OIL BURNERS

fueloil & oil heat

	R-1100 Central		R-1100 Space	
	Number Issued	*Average Gallons*	*Number Issued*	*Average Gallons*
Bartholomew	107	1597.2	244	289.0
Benton	101	1113.9	541	520.6
Blackford	41	1463.9	274	220.7
Boone	40	1351.3	372	219.6
Brown	7	837.9	33	790.5
Carroll	46	1193.6	233	612.8
Cass	72	3068.0	374	475.1
Clark	163	1231.7	824	265.5
Clay	22	1315.0	17	486.5
Clinton	65	1352.8	276	425.2
Crawford	2	825.5	51	230.3
Daviess	31	198.0	250	96.9
Dearborn	52	1344.0	179	595.4
Decatur	25	1483.8	55	297.2
Dekalb	163	1435.7	140	557.5
Delaware	308	1299.6	791	263.8
Dubois	62	1303.4	85	90.2
Elkhart	604	1371.3	759	542.3
Fayette	123	1249.0	343	282.8
Floyd	209	1356.0	861	250.5
Fountain	14	1160.7	31	455.2
Franklin	14	1615.4	106	191.0
Fulton	51	1412.5	341	461.7
Gibson	29	474.1	69	246.3
Grant	197	1560.7	659	387.4
Greene	14	801.3	76	172.3
Hamilton	118	1273.1	242	496.9
Hancock	44	1021.3	275	386.4
Harrison	4	1217.5	203	425.4
Hendricks	64	1148.1	288	495.6
Henry	111	1347.8	419	337.4
Howard	118	1466.5	343	302.7
Huntington	129	1235.2	494	397.1
Jackson	85	1232.8	158	202.6
Jasper	57	1424.0	382	513.6
Jay	62	1638.9	288	421.2
Jefferson	62	1591.8	100	379.0
Jennings	18	1252.8	85	450.5
Johnson	106	929.4	295	291.0
Knox	7	1197.1	92	102.2
Kosciusko	193	1190.2	489	512.4
La Grange	69	1122.5	153	498.2
Lake	2,859	1420.3	4,794	471.0
La Porte	1,048	1222.1	1,872	492.6
Lawrence	52	1618.1	166	209.1
Madison	700	1298.4	1,889	345.4
Marion	4,415	1449.8	4,224	333.7
Marshall	147	1328.5	535	484.9
Martin	..	..	34	190.3
Miami	144	1720.1	197	465.3
Monroe	93	1490.4	197	221.3
Montgomery	54	1157.1	200	341.3
Morgan	31	1408.4	46	412.4
Newton	65	1419.8	374	557.0
Noble	99	1413.7	400	470.3
Ohio	12	1149.2	150	285.3
Orange	18	1239.4	65	345.4
Owen	2	2125.0	54	235.8
Parke	11	1247.3	46	220.6
Perry	11	863.6	65	219.9
Pike	3	1980.0	12	109.6
Porter	598	1386.4	1,001	660.8
Posey	4	1765.0	115	225.5
Pulaski	34	1519.4	288	539.5
Putnam	58	1299.5	53	437.1
Randolph	83	735.1	44	481.8
Ripley	19	1728.9	522	295.9
Rush	86	1351.9	150	639.9
St. Joseph	2,141	1386.3	1,771	551.8
Scott	37	1574.3	233	350.9
Shelby	81	1480.7	201	238.9
Spencer	3	1166.7	84	242.1
Starke	59	1649.7	716	584.8
Steuben	86	900.2	131	579.8
Sullivan	15	997.7	58	152.1
Switzerland	6	1633.3	77	256.6
Tippecanoe	181	1314.6	560	388.5
Tipton	24	1308.3	148	426.2
Union	17	1482.4	100	253.8
Vanderburgh	43	1323.7	1,089	185.2
Vermillion	12	1245.8	151	106.8
Vigo	243	1246.2	220	173.0
Wabash	136	1561.1	428	439.0
Warren	13	1385.4	184	451.1
Warrick	7	1208.6	43	133.1
Washington	1	800.0	103	239.5
Wayne	417	1409.7	468	279.9
Wells	88	1599.7	433	449.8
White	64	1443.3	241	630.8
Whitley	78	1250.9	447	523.9
INDIANA TOTAL	16,794	1377.7	37,227	410.3
OHIO				
Cincinnati District				
Adams	17	1302.4	171	316.7
Brown	15	1460.0	204	311.9
Butler	567	1424.0	1,052	325.3
Clark	125	1305.6	624	340.0
Clermont	118	1451.4	615	337.3
Clinton	49	1442.6	217	374.0
Darke	42	1345.7	519	396.7
Greene	94	1239.1	734	358.3
Hamilton	1,790	1300.6	6,153	298.2
Highland	174	641.6	60	200.9
Lawrence	3	600.0	15	284.1
Miami	42	1735.2	932	436.9
Montgomery	605	1113.1	2,248	355.1
Preble	46	1207.1	472	423.8
Scito	22	1217.3	118	246.7
Warren	143	1345.2	298	280.5
Cleveland District				
Ashland	17	1562.2	108	301.4
Ashtabula	283	1374.5	696	357.0
Carroll	22	1070.5	69	263.4
Columbiana	96	1344.1	153	340.5
Cuya Hoga	3,378	1372.8	7,389	393.9
Erie	78	1579.7	889	354.9
Geauga	168	1267.6	512	312.1
Huron	44	1344.2	235	390.1
Lake	805	1505.9	2,873	445.2
Lorain	394	1119.6	1,046	326.9
Mahoning	194	1456.4	572	307.6
Medina	236	691.9	359	433.1
Portage	185	1384.8	731	358.8
Richland	94	1039.1	361	282.7
Stark	368	1302.4	893	219.2
Summit	1,374	1163.2	3,916	281.6
Trumbull	261	1364.2	1,975	265.3
Tuscarawas	20	1255.7	107	139.2
Wayne	62	1214.1	256	224.6
Columbus District				
Athens	18	1160.3	33	375.9
Belmont	9	1705.5	70	147.7
Champaign	43	1475.6	243	410.6
Coshocton	11	1149.1	111	159.3
Delaware	83	1314.2	173	337.4
Fairfield	9	1093.3	75	254.2
Fayette	29	1450.0	82	312.3
Franklin	685	1118.3	1,704	215.9
Gallia	..	..	133	137.0
Guernsey	1	1425.0	53	122.8
Harrison	..	..	27	335.2
Hocking	1	1200.0	2	350.0
Holmes	6	1694.2	11	273.5
Jackson	5	1460.0	16	239.7
Jefferson	50	1234.0	149	168.9
Knox	30	1308.7	128	301.9
Licking	83	1406.7	207	270.7
Logan	104	1555.6	293	402.3
Madison	34	893.7	97	311.7
Marion	16	1559.4	245	194.2
Meigs	..	..	10	265.7
Monroe	..	..	..	..
Morgan	..	..	..	..
Morrow	6	1658.3	77	232.1
Muskingum	18	1176.1	255	183.0
Noble	1	850.0	1	650.0
Perry	10	1430.0	58	221.6
Pickaway	19	1684.7	93	300.2
Pike	4	1602.8	38	225.0
Ross	55	1367.3	265	187.8
Shelby	51	1160.4	278	402.8
Union	59	1080.5	270	235.7
Vinton	3	1466.6	10	269.0
Washington	2	1115.0	43	167.3

(*Continued on next page*)

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THE REX CLAY PRODUCTS CO., 14414 DEXTER BLVD. DETROIT 6

	R-1100 Central		R-1100 Space	
	Number Issued	Average Gallons	Number Issued	Average Gallons
Toledo District				
Allen	153	1346.7	911	301.4
Auglaize	78	1316.1	411	404.7
Crawford	26	1685.0	153	286.3
Defiance	122	1507.3	327	349.2
Fulton	194	1393.1	423	521.9
Hancock	54	1398.5	332	454.4
Hardin	33	967.9	254	293.2
Henry	97	1425.7	405	529.1
Lucas	4,425	1471.8	5,518	494.6
Mercer	85	1331.2	167	628.2
Ottawa	199	1381.8	940	499.4
Paulding	68	1049.7	202	494.6
Putnam	49	1419.2	110	580.3
Sandusky	212	1276.2	497	432.0
Seneca	102	1530.6	313	558.2
Van Wert	75	1564.3	130	379.0
Williams	185	1266.6	333	481.3
Wood	302	1596.6	1,038	493.4
Wyandot	24	1279.2	126	387.4
OHIO TOTAL	19,859	1343.6	55,449	365.4
MICHIGAN				
Detroit District				
Clinton	184	1506.5	1,467	609.9
Eaton	111	1556.4	1,444	607.1
Hillsdale	202	2040.7	1,302	537.0
Ingham	1,101	1415.8	3,232	530.6
Jackson	992	1454.1	1,858	589.7
Lenawee	454	1368.2	1,871	574.2
Livingston	141	1448.5	1,204	655.0
Macomb	2,175	1245.9	10,867	645.1
Monroe	373	1442.5	2,244	567.4
Oakland	7,634	1439.7	9,417	657.1
St. Clair	760	1497.6	3,393	586.7
Washtenaw	2,089	1664.1	3,057	518.5
Wayne	22,551	1676.0	39,342	554.3
Escanaba District				
Alger	4	1180.0	172	618.6
Baraga	15	1806.7	183	529.8
Chippewa	127	1726.1	318	741.1
Delta	145	1520.7	493	756.4
Dickinson	160	1613.6	753	652.3
Gogebic	204	1561.3	717	619.4
Houghton	98	2091.3	180	545.2
Iron	59	1445.8	344	688.1
Keweenaw	3	716.7	42	359.4
Luce	29	1834.7	136	589.7
Mackinac	8	1900.0	190	632.3
Marquette	291	1581.5	1,065	583.1
Menominee	89	1670.2	694	571.3
Ontonagon	15	1373.3	234	500.9
Schoolcraft	0	0	32	692.5
Grand Rapids District				
Allegan	475	1265.1	1,947	655.9
Antrim	13	1261.5	340	640.5
Barry	62	1781.5	1,305	710.9
Benzie	57	1604.4	385	567.7
Berrien	1,382	1396.5	3,047	507.8
Branch	122	1833.6	861	571.0
Calhoun	1,626	1437.6	3,112	526.0
Cass	272	1206.5	906	536.6
Charlevoix	86	1261.1	530	489.3
Emmet	183	1356.4	699	468.8
Grand Traverse	299	1501.7	982	655.1
Ionia	138	1484.2	1,580	722.7
Kalamazoo	2,841	1303.7	2,368	542.8
Kalkaska	9	1750.0	115	593.9
Kent	1,539	1588.1	6,103	677.6
Lake	12	1021.2	179	469.8
Leelanau	40	539.0	161	510.6
Manistee	49	1770.6	616	597.3
Mason	81	1739.1	925	654.6
Mecosta	58	1117.0	628	490.5
Missaukee	24	1530.8	230	666.5
Montcalm	125	1538.3	1,498	650.4
Muskegon	259	1607.5	4,452	631.2
Newaygo	77	1500.5	814	685.6
Oceana	50	1678.8	683	658.8
Osceola	60	1737.2	459	674.1
Ottawa	809	1473.7	2,417	610.7
St. Joseph	551	1145.6	1,124	523.5
Van Buren	519	837.1	1,240	595.5
Wexford	102	1450.9	697	670.5

	R-1100 Central		R-1100 Space	
	Number Issued	Average Gallons	Number Issued	Average Gallons
Saginaw District				
Alcona	20	1488.5	176	615.9
Alpena	74	1413.6	393	523.4
Arenac	42	1213.8	533	763.1
Bay	256	1524.8	3,612	698.8
Cheboygan	47	1572.8	657	631.4
Clare	35	1536.6	451	676.5
Crawford	38	1547.5	255	643.6
Genesee	4,058	1256.8	8,228	604.1
Gladwin	49	1508.2	524	623.6
Gratiot	83	1445.4	1,515	605.8
Huron	289	1426.4	1,602	601.7
Iosco	56	1549.1	870	673.8
Isabella	37	1463.5	762	599.5
Lapeer	169	1620.5	1,220	619.7
Midland	60	1377.3	1,630	702.3
Montmorency	4	1342.5	163	615.0
Ogemaw	72	1454.9	490	595.4
Oscada	10	1254.0	153	631.2
Otsego	47	1457.2	283	570.9
Presque Isle	16	1424.4	170	517.0
Roscommon	59	1544.7	736	586.0
Saginaw	464	1706.6	6,377	653.4
Sanilac	98	1120.0	1,245	622.5
Shiawassee	118	1480.6	1,618	621.3
Tuscola	155	1473.9	1,325	666.8
MICHIGAN TOTAL	58,290	1517.3	161,642	602.2
IOWA				
Des Moines District				
Adair	58	1307.6	444	602.7
Adams	66	1285.0	282	517.3
Appanoose	10	1095.0	42	422.8
Benton	376	1413.0	1,212	653.9
Black Hawk	2,100	1273.1	1,928	580.3
Boone	251	1393.8	846	613.0
Bremer	252	1420.5	932	661.5
Buchanan	433	1081.5	1,165	592.0
Butler	185	1179.7	901	582.0
Calhoun	45	1094.4	901	571.0
Carroll	382	1289.8	948	636.6
Cerro Gordo	226	1187.2	1,291	639.8
Chickasaw	80	1701.9	509	680.0
Clarke	50	1404.0	222	483.0
Clay	287	1273.5	947	588.7
Clayton	257	1313.1	891	505.9
Dallas	154	2262.5	812	614.6
Davis	30	1508.3	78	391.8
Decatur	42	1282.1	266	435.2
Delaware	168	1323.8	956	436.1
Dickinson	195	933.7	873	525.9
Emmet	112	1275.9	621	566.3
Fayette	194	1280.9	1,113	560.7
Floyd	244	1388.4	1,128	671.8
Franklin	193	1356.9	949	592.0
Greene	93	1126.4	885	567.3
Grundy	188	1276.1	864	794.6
Guthrie	116	1172.0	585	548.7
Hamilton	338	1358.7	1,034	684.6
Hancock	79	1201.9	839	557.9
Hardin	439	1506.5	1,134	611.9
Howard	114	1606.1	910	581.5
Humboldt	135	1250.0	712	615.9
Iowa	112	1378.8	1,008	351.5
Jasper	206	1418.2	664	450.8
Jefferson	134	1533.0	282	459.4
Johnson	487	1447.1	631	517.5
Keokuk	93	1258.4	448	559.2
Kossuth	333	1318.5	1,306	594.6
Linn	2,065	860.0	2,582	606.2
Lucas	44	1724.8	58	638.4
Madison	81	1307.8	575	554.3
Mahaska	58	1469.5	226	491.0
Marion	121	779.6	283	497.8
Marshall	530	1293.8	794	526.4
Mitchell	116	1499.5	641	673.2
Monroe	5	1440.0	49	287.3
Palo Alto	160	1258.2	956	620.0
Pocahontas	207	1273.9	1,073	627.7
Polk	4,546	1239.5	2,791	539.6
Poweshiek	287	1353.4	432	609.8
Ringgold	34	1062.6	313	481.1
Story	676	1240.2	1,375	576.8

(Continued on page 92)

Webster Electric Products All Result In Top Performance

Sure-fire, instant ignition when you want it is the result of careful engineering and painstaking manufacture of Webster Electric Transformers.

Following are features that are behind their fine performance:

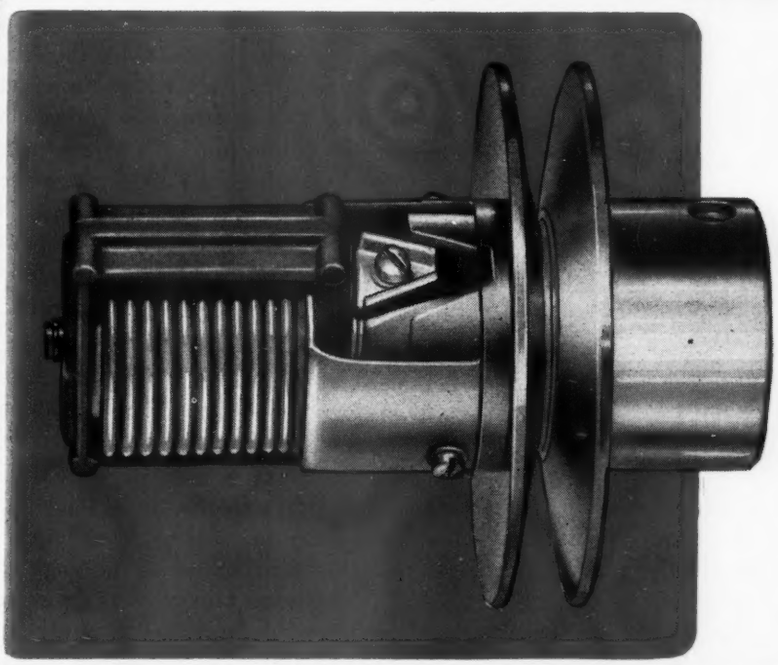
Mica insulation on high voltage coils does not lose efficiency with age or high temperatures.

The coils are wound with exacting care, and assembled on a core of nonaging laminations.

The built-in regulation insures ignition of cold oil, even when line voltages are low.

The metal shield reduces radio interference to a minimum.

By comparison—point for point—you'll find Webster Electric Ignition Transformers tops in performance.



WEBSTER ELECTRIC Thermodrive

for control of warm air flow is an advanced step in warm air heating

Thermodrive is designed to regulate warm air flow through control of fan speed in a forced warm air heating system so as to give more even room temperatures, along with more economical heating performance. It is mounted on the fan motor shaft in place of the fixed driving pulley.

A sample of warm air is continuously taken from the bonnet through a control duct and discharged over a thermostatic bellows, which in turn actuates a sliding sheave. This changes the pulley's effective diameter and results in the increased or decreased speed of warm air flow.

Be sure to secure the complete story on this new equipment. Write Webster Electric Company, Racine, Wisconsin.

WEBSTER ELECTRIC

RACINE WISCONSIN

Export Dept.: 13 E. 40th Street, New York (16), N. Y. Cable Address "ARLAB" New York City

"Where Quality is a Responsibility and Fair Dealing an Obligation"

	R-1100 Central		R-1100 Space	
	Number Issued	Average Gallons	Number Issued	Average Gallons
Tama	390	850.8	1,317	278.8
Union	52	1355.0	422	534.4
Van Buren	20	835.0	152	588.9
Wapello	496	1402.9	653	411.0
Warren	120	1255.9	324	591.3
Washington	124	1306.0	903	532.5
Wayne	26	1371.2	129	449.9
Webster	62	1429.4	909	621.0
Winnebago	60	810.5	655	565.9
Worth	..	..	686	736.0
Wright	119	1214.2	853	630.1
Sioux City District				
Buena Vista	458	1327.9	1,067	572.7
Cherokee	204	1432.4	990	610.7
Crawford	213	1409.4	716	567.7
Ida	140	1221.0	478	510.6
Monona	233	1013.3	893	587.7
O'Brien	253	1273.6	1,098	586.3
Plymouth	233	1452.2	1,029	598.6
Sac	536	1361.8	1,846	583.9
Sioux	350	1256.9	1,553	582.5
Woodbury	2,320	1197.9	2,031	572.1
Omaha District				
Audubon	36	1369.2	369	796.7
Cass	130	1305.1	791	505.4
Fremont	128	1398.8	691	539.0
Harrison	225	1121.4	759	605.0
Mills	161	1358.4	187	515.1
Montgomery	168	1342.0	540	503.4
Page	249	1361.1	791	536.0
Pottawattamie	370	1268.9	1,390	524.7
Shelby	187	1194.2	702	495.4
Taylor	72	1185.3	416	519.4
Sioux Falls District				
Lyon	146	1194.3	925	556.4
Osceola	122	1086.2	729	569.2
La Crosse District				
Allamakee	179	1179.7	411	437.9
Winneshiek	196	1432.1	907	535.7
Moline District				
Cedar	222	1321.0	661	529.4
Clinton	775	701.2	1,775	562.0
Des Moines	665	1429.5	1,379	485.0
Dubuque	1,408	1546.9	3,178	584.9
Henry	98	1324.6	816	513.7
Jackson	159	1432.8	1,261	528.3
Jones	150	1640.4	990	597.2
Lee	461	1401.7	1,181	462.8
Louisa	50	1335.3	502	511.1
Muscatine	292	1350.1	677	475.4
Scott	716	1665.8	1,731	457.4
IOWA TOTAL	31,961	1281.2	84,810	565.6

Service Supervisor Wants Better Oilheating Equipment

by

Charles W. Fisher

WE READ with apprehension in the June issue of FUELOIL & OIL HEAT the article on the Fuel Oil Outlook. From where I sit it appears that part of the answer to the problem on page 77 is given in the article by Mr. J. W. Schulz on page 70. To Mr. Schulz plea for better engineered installations I would add my petition for better engineered equipment. I find myself reluctant to admit that the need for oil heat service is as "certain as death and taxes," and by the same token, the accepted ratio of 125 gal. of oil to a ton of coal (heating effect) is an open challenge for improved oil heating equipment that will "give."

In its infancy the Oil Burner Industry was content to build conversion burners for use in coalfired boilers,—then the industry arrived at its adolescence when we promoted ourselves to the use of an integral design of burner and boiler,—so now let us do the mature thing and design an oil fired boiler with a heating system that is tailored for oil heat exclusively.

Success, we are told, is the faculty of retaining the useful and discarding the useless, so we shall sketch an improved oil burner-boiler-heating system by first setting down the components that at present need improvement. Among the many facts revealed to us after a quarter century of oil heat development there are these;—

1. That thermostats do a marvelous job of maintaining the temperature in the room installed, but are inadequate for controlling whole buildings except the latter be barns or churches (one room).

2. That the use of circulator pumps, suction tees, modulating valves, orifices and fast vents on radiation is at best an improvisation and they are quite incapable of meeting heating duty variables due to windage, sun exposure and family activities.

3. That a ten room dwelling should have at least eight thermostats controlling the heat exactly to each room as needed, that instead of turning the heat all on or all off intermittently, a marked economy will be effected when only one or two rooms at a time call for heat (comparable to an eight cylinder motor as against a one lunger). This arrangement will permit the use of 50% smaller boilers and oil rates.

4. That all other factors being equal, a dwelling is more drafty with oil heat than with hand fired coal, and the oil heating industry should lead the heating field by doing something about Infiltration, meaning this; burner fans, barometric dampers, chimneys, gas appliances and occupants need fresh air but its flow is not controlled. Leakage of air through doors, windows and walls into a dwelling is an expensive way to provide it and is a source of discomfort for the occupants.

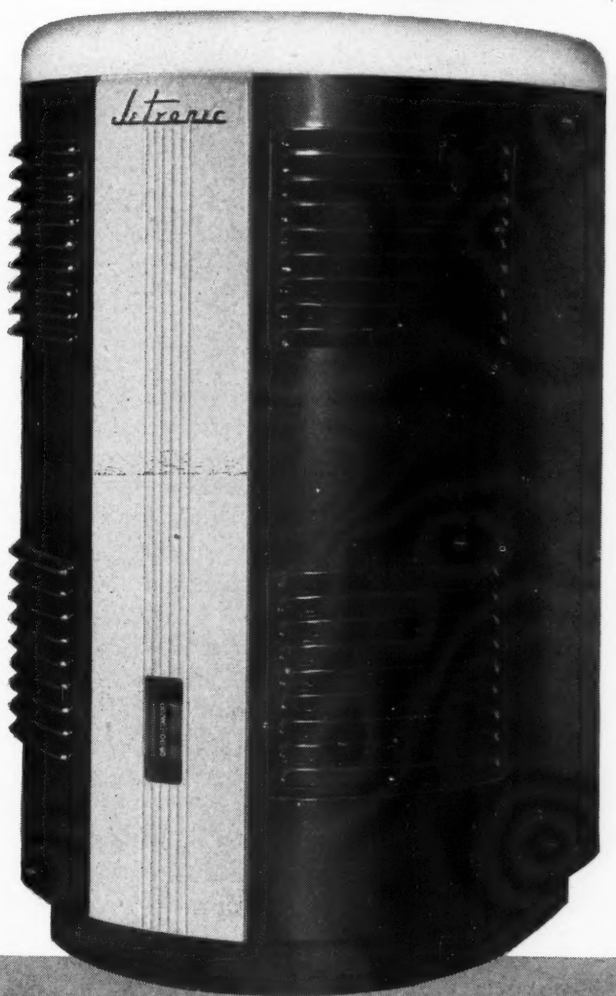
5. That the buying public has an uncanny sense of values. When buying cars, homes or heating equipment they are remarkably well informed about the "bugs" in a commodity. The average burner prospect knows such terms as oil leaks, odor, ignition failure and flame adjustment, all of them familiar service bugs that we have lived with for 25 years. It is not too difficult to develop equipment that will eliminate the first three items and only recently we began to perform the latter scientifically.

6. That the weak links in the chain of oil burner components are,—a, Controls, b, Pumps, c, Combustion Chambers. To elucidate, a, Without the use of complicated mechanisms, Controls should operate to stop the burner instantly upon ignition or flame failure. b, The high pressure atomizing burner, while more convenient to assemble, is inherently weak due to the need of fine mesh strainers, excess noise and power needed to handle 10 or 15 times the quantity of fuel consumed, problems of errosion and bellows and pis-

unless you sell
CONSOLIDATED!

The Consolidated Heavy Duty Oil Burner

with the Quiet, Rolling Flame—for efficiency, true quiet, long-life in its precision machined castings. We know of no other burner on the market equal to it. Meets or exceeds all requirements of Underwriters' Laboratories, Inc.



The Sensational New Consolidated Jetronic Oil Circulating Heater

three **instead of the conventional** ***two*** **combustion areas. Saves up to 13% on fuel. Up to 60% more heat. Burns numbers 1, 2, or 3 oil. Also distillate or kerosene. Variable flame to 70,000 B.T.U. output rating. Clean, efficient, safe, odorless, dependable.**

ton leakage in cut off mechanisms, the extremely sensitive response of this system to changes in the viscosity of the fuel and the unattainable requirement of maintaining perfectly clean atomizers (nozzles). c, Perhaps it would serve our purposes better, when designing oil burners and combustion chambers, to consider them as CO (carbon monoxide) generators (in reality they are) rather than CO_2 producers. Obviously the generation of CO gas from a hydrocarbon fuel progresses in two stages, i.e.—atomization of the fuel and its exposure to radiant heat. To illustrate the process consider a situation such as ignition failure. Here we see upon operating the burner, a fine spray of atomized oil that, sans ignition, resolves itself again to liquid oil developing no CO gas, but when this atomized spray is presented to the radiant heat of a hot combustion chamber!!—you know the rest. CO gas is generated at the wrong end first. The several methods of fuel atomization have been developed to reasonable perfection but the average combustion chamber reflects only 5% or 10% of the radiant heat of combustion to the point of CO generation. In a properly contoured combustion chamber up to 50% of the radiant heat can be focused to the line of flame propagation, improving CO generation proportionately, producing clean, hot fires and implementing the use of No. 4 and No. 5 oil for domestic use.

7. That the reputed utility and economy of the "summer-winter hookup" is a fetish. The "many seasoned" oil burner man knows that there is no economy of effort, material, fuel or service in the installation and operation of the average hot water hookup. As we mentioned above, the quietest operation and greatest economy of fuel and service can be attained only when the burner-boiler-heating system are designed as an integral unit. It is true that a new valve and a new control are needed to accomplish this but if it is our goal to produce and sell heating systems representative of this day and age, every improvement is a duty performed.

◈

Edward D. Jackson is revealed as sales manager, Coroaire Heater Corp., Cleveland 15, Ohio, and Hot Boy, Inc., its subsidiary. He will direct national sales of winter air conditioning units and space heaters through jobbers and dealers.

Editorial Leaks

(*Continued from page 8*)

issue, under the by-line of Charles W. Fisher.

One of the chief themes we hear is that we still are selling the public the same old equipment, though we are two years into the postwar era that was to bring marvels of engineering progress. In answer to this argument, it is easy to understand why the manufacturers are reluctant to announce new models when they cannot supply the demand for their existing types. With dealers begging for equipment, no manufacturer is willing to disrupt his production long enough to retool and reorganize his plant. New equipment is sure to appear on the market as soon as the supply of present-day equipment catches up with demand. The same applies to automobiles and every appliance that still is in short supply.

There is the further consideration of price. The American public can have almost anything it is willing to pay for, but it never is willing to spend its money until it is convinced that it wants it. In short, new equipment to do new things still has to be sold before it can appear in any volume. A thermostat in every room may allow added comfort and greater economy, but until the public is convinced that the added cost is a good investment, there will be no demand for this improvement.

We like a good, healthy gripe, and encourage them on the chance that out of the lot will come a valuable idea or two. Dealers should remember, however, that the sales weight is on them. Manufacturers will turn out anything dealers can sell.

Esso Pricing Policy Seen as Oil Ceiling

PRICE INCREASES both in heating oils and gasoline which have been announced recently have been opposed in principle by Standard Oil Company of New Jersey in a statement issued July 24. Citing recent increases in product price, the company's statement said "It is our opinion that under present conditions where a shortage of fabricated steel and other materials limits the industry's ability to produce, transport and refine more crude oil, further price increases in either crude or products will not be effective in increasing the overall supply of petroleum products. We feel that such price increases would only be inflationary and should be resisted."

Continuing an explanation of its "hold-the-line" policy, the statement said, "Standard of New Jersey believes so strongly that further increases in the price of crude oil or products under present conditions are not in the best interest of either the oil industry or the public that it is following the general policy of not increasing prices unless such increases will tend to maintain or bring out additional supplies.

"As is the case with most other oil companies, the products of Standard reach the consumer principally through dealers and distributors, and the company believes that its 'hold the line' policy has not worked a hardship on these independent businessmen. We are continuing to share our available supplies equitably with all our customers."

Though the Standard Oil Company of New Jersey is an East Coast refining and marketing firm and not to be confused with Standard Oil Company (N. J.), easily the largest oil company in the country, it is believed that the marketing company may be stating policy for the larger, integrated company. Bucking a price policy of Standard Oil (N. J.) would be extremely difficult for most of the smaller majors, so the present pricing policy may effectively put a ceiling on oil prices. It is pointed out that all branches of the industry now are operating at capacity, and no price increase on crude or products would "tend to maintain or bring out additional supplies." The effect may be to clamp a lid on oil prices, though not a very firm lid. Dealers are screaming for a better margin, and any increase in retail prices of gasoline or fueloil is met immediately by all dealers in the area, regardless of the posted price they pay.

Crude oil prices were on the verge of a new wave of increases, according to many oil men, who now are watching the effect of the new price policy of Standard. Some now believe that the Standard policy will have a stabilizing effect and will discourage the expected crude increases.

The middle of July saw price increases announced for fueloil and gasoline by such market leaders as Socony-Vacuum, Standard Oil (Ind.), Atlantic and Sun. Toward the end of July Socony was a half cent over Esso for gasoline and light heating

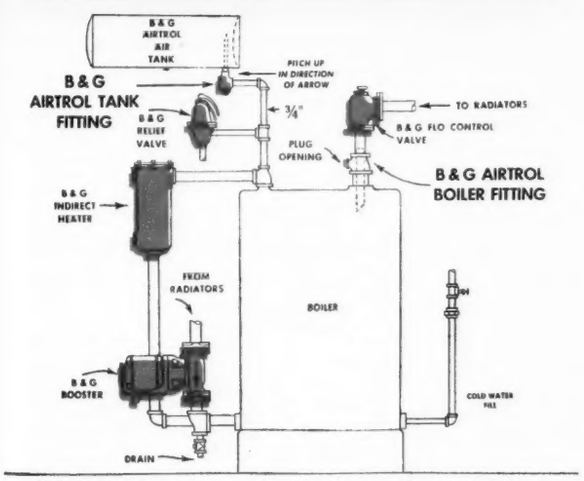
—Air Trouble Ended!

For the first time! A way to remove air from a hot water heating system and prevent its return.

AIRTROL SYSTEM

REG. U. S. PAT. OFF.

PATENT NUMBER 2,395,697
OTHER PATENTS PENDING



B & G Airtrol installation on boiler with external type water heater

Really sensational—tested and proved successful in actual operation! The B & G Airtrol System positively eliminates the accumulation of air in the radiators of hot water heating systems—*a serious and annoying problem never before satisfactorily solved!*

When water is heated, it releases air in nearly direct proportion to the temperature of the water. In other words, the hotter the water, the less air it can hold in solution. Conversely, as the water cools it re-absorbs air until the original content is restored.

It is this physical relationship between air and water which, in the past, has caused air binding in the system and sometimes waterlogging of the expansion tank.

B & G Airtrol System now offers a genuine remedy—amazingly simple and effective

The B & G Airtrol System consists of two basic parts—the Boiler Fitting and the Tank Fitting. Their combined function is to trap air in the compression tank and prevent its return to the boiler, piping and heat distributing units. Airtrol units can be installed on any cast iron or steel hot water boiler.

COMPLETE DESCRIPTION AND INSTALLING INSTRUCTIONS ARE GIVEN IN NEW FOLDER. SEND FOR YOUR COPY!

WATER HEATERS
•
FORCED HOT WATER HEATING SYSTEMS
•
PUMPS AND HEAT EXCHANGERS

Hydro-Flo* PRODUCTS

BELL & GOSSETT COMPANY
Dept. AD7, Morton Grove, Ill.

*Reg. U. S. Pat. Off.

fuel oil & oil heat

oils, and the petroleum industry was watching to see which would crack. Standard's announced policy was taken to mean that they were not contemplating any increase to meet the higher price of the chief competitor.

Public relations conscious oil companies already are somewhat embarrassed by their published financial reports. In the face of constantly increasing profits, many of which were at all-time highs at the end of the second quarter, it is hard to explain the need for higher product prices. Men in the industry know that the oil business is facing more than $3,000,000,000 worth of sorely needed expansion which must be built in spite of increasing costs, but this is much too involved to get over to the public which sees only the higher prices and the larger profits.

◈

Experiment Shows Public Is Brand-Name Conscious

LAST FEBRUARY, Philadelphia's big Lit Brothers department store experimented with public reaction. Lit's president, Harold W. Brightman, proved to himself and his employees something he had already known . . . that the public knows what it wants.

Details of the experiment were released only last month and created a sensation in marketing circles. In brief, a name brand item outsold an identical "unknown" 15 to 1.

Lit, with the cooperation of the Simmons Company, got 48 mattresses from Simmons. It left the Simmons label on 24 of the mattresses and put a "phony" Dreamland label on the other half. The mattresses were identical as to ticking, construction and price.

Sale of the mattresses, stimulated by a single advertisement which did not mention names, moved 15 of the Simmons mattresses in the first 77 minutes after the store opened. During the same period, only one Dreamland found a buyer. The first sale was called off when there were no more of the Simmons-labeled mattresses available.

In a second test the following week, Lit ran another newspaper ad, but this time mentioned Simmons by name. Traffic at the opening was three times what it had been the previous week . . . an obvious measure of the pulling power of the brand name in the ad. As an acid test, customers were given a choice of the Simmons mattress at $39.50 or the Dreamland at $34.50. Simmons outsold Dreamland 32 to 4, or 8 to 1. A further reduction in the Dreamland to $29.50, or 25% less, found Simmons still outselling its identical, but unknown, duplicate.

Substantially the same picture is true in radios. Today, nationally known radios are being advertised and sold, while unknowns accumulate dust on store-room shelves. Big price cuts of the unknowns haven't yet moved them from inventories.

The nation's big merchandisers, once featuring their own private brand names, now are plugging nationally known products. Montgomery Ward and Company, Kroger Company and W. T. Grant Company are just a few who are capitalizing on the sales advantages of selling goods which are advertised by their makers and which long have been drummed into the public mind as good, reputable, reliable and economical products.

◈

Kerosene Demand Growth By Types of Uses

IT HAS ALWAYS been difficult to get any very comprehensive figures on the end uses of kerosene type products—Kero, No. 1, Range, Stove Oil, etc.—principally because in some parts of the country most of the volume is sold by peddlers, who keep few records, and wouldn't have time to dig them up if they had them.

However, in every section of the country a lot of space heaters, range burners and water heaters are served with fuel by regular fueloil distributors, and this group does have operating data which it willingly makes available. Thus, today when it is so important to know growth trends by products in order to better distribute the lean supplies next season, considerable usefulness is to be found in the growth rates of kerosene applications by these fueloil distributors. In the absence of any other data, it can be assumed that their growth rates reflect the market to a fair degree.

Several hundred fueloil distributors have reported the number of customers using kerosene, No. 1, etc., during the month of May 1945 and then again for May 1947, a period corresponding roughly to the two heating seasons since the war and rationing ended. The table shows the rate of growth in per cent of number of customers for the two year period, and for seven areas of the country.

The footings of the first three columns in the table represent a weighted average after assigning to each group of states its relative importance as kerosene consumers, based upon 1945 Bureau of Mines data. The fourth column, however, is not weighted in any manner, and is based upon simply an addition of the three products. The actual ratio throughout the country of space heaters to range burners to water heaters is not known.

It is probable that an allowance of five per cent, plus or minus, in the fourth column figures would overcome any distortion in the ratio between the three products. In other words, the 49% growth in the Mid Atlantic area for the combined three products might be looked upon as a growth in demand for Kero or No. 1 for domestic uses of somewhere between 44% and 54% during the two year period covered. There is every indication that the growth of demand in the next heating season will at least equal the average of the two prior years.

◈

William B. Forrest has been appointed Michigan factory representative for General fueloil filters, made by General Filters, Inc., Detroit 23, Mich.

Two Year Growth Rates, Space Heaters, Range Burners, Etc.

(Percent gain in number of users May 1945 to May 1947)

	Space Heater Users	*Range Burner Users*	*Water Heater Users*	*Combined Three Applications*
New England	45%	neg.	neg.	5%
Mid Atlantic	35	97%	220%	49
South Atlantic	113	225	136	125
Middle West	73	68	106	76
Central South	123	..	..	123
Mountain States	48	29	78	49
Pacific Coast	95	143	98	99
Total U. S.	62	64	93	63

How B.I. helps you keep your customers happy

• B.I.—Burning Index—is a sure-fire test of furnace oil's burning efficiency. A development of Atlantic Research, we use it to maintain the *high quality* of Atlantic Furnace Oil.

• In your customers' burners, the high B.I. of Atlantic Furnace Oil is on the job all the time. No fair-weather friend, the B.I. of this uniform fuel maintains good-will for you in *all kinds of weather*. Atlantic Furnace Oil can stand reasonable variations in feed and air . . . burns evenly and cleanly . . . keeps down complaints and service costs.

ATLANTIC FURNACE OILS

TERMINALS AT:

Providence, R. I.	Allentown, Pa.
New Haven, Conn.	Mechanicsburg, Pa.
Albany, N. Y.	Northumberland, Pa.
Binghamton, N. Y.	Philadelphia, Pa.
Buffalo, N. Y.	Reading, Pa.
Elmira, N. Y.	Williamsport, Pa.
Rochester, N. Y.	Wilmington, Del.
Syracuse, N. Y.	Baltimore, Md.
Newark, N. J.	Richmond, Va.
Trenton, N. J.	Wilmington, N. C.
Brunswick, Ga.	

fuel oil & oil heat

The Atlantic Refining Company

REFINERIES AT PHILADELPHIA, PENNSYLVANIA; AND ATRECO, TEXAS

No Midwest Hardship

(*Continued from page 74*)

largely represented by the rural market, in 1947 will be double the 1941 record. The highway consumption of gasoline in the Midwest in 1947 should exceed 1941 by approximately 14%.

4. It is impossible to secure data on burner installations and space heater installations by state areas. The desire for the convenience incident to oil heating, stimulated by shortages of coal and interruptions in the flow of that product to the market, resulted in a record production and shipment of domestic burners to the market in 1946. This applies both to the central type heating unit and to the space heater. If we consider only the actual shipments of these two types of burners to the market, plus unfilled orders on the books at the end of 1946, this factor will have added 329,000 barrels per day to national demand for petroleum products. It is my belief that expansion of this type of consumption unit was substantially greater in the Midwest than was experienced on a national basis.

5. Dieselization of railroads received its first impetus in Midwestern areas. This means of power became firmly established on a steel efficiency basis during the war. It was but natural, therefore, that following the war the greatest growth of demand would come in the Midwestern market which had had a background of satisfactory experience. Such an expansion has taken place and the oil industry is even now hard pressed to meet requirements for this fuel, as well as for burning oils and gasolines.

"An appreciation of the current situation in the Midwest, resulting from the phenomenal growth of demand, and the industry's effort to meet requirements may be obtained from a simple review of inventories in that area compared with those in the remainder of the Country. The period used for comparison is the end of June, 1947, with the end of June, 1946.

"Gasoline stocks in District II stood at 94.8% of June, 1946, levels. In the United States, apart from District II, stocks were 101.4% of last year's levels.

"Kerosene stocks, which include most of the product known commonly as Range Oil or Heater Oil are 22.3% below last year's level in District II as contrasted with a 10.9% rise experienced by the rest of the country.

"District II distillate stocks, including furnace oil, diesel fuel and distillates used by industry, are 21.7% below last year's level as contrasted with an increase of 18.8% experienced by the rest of the Country.

"Stocks of residual fuel oil in District II are down 15.4%, contrasted with a 6.9% increase in the rest of the United States.

"The differences in the stocks of crude oil are even more striking. The latest Bureau of Mines data (for April, 1947) contrasted with comparable figures for a year earlier show that while crude stocks in the United States outside of District II have increased 21.4%, stocks within the District have declined 13.7%. In actual numbers, District II stocks of crude have dropped 11,122,000 barrels over the year while in the remainder of the United States they have risen 30,305,000 barrels. This, perhaps more than any other of the facts presented, demonstrates the almost superhuman efforts the petroleum industry in the Midwest has exerted to meet the record demand levels. Likewise, it demonstrates that the tight Midwest supply situation is not assignable to a national shortage of crude oil. Rather, it is mainly attributable to a system of transportation serving the Middle West that is geared to a pre-war and not a post-war level of demand."

Petroleum Council Reports Barge Facilities Tight

OIL BARGE CAPACITY on the Mississippi River system has increased more than 10% since July 1, 1946, and there has been a comparable increase in towing capacity, in spite of which there is a substantial shortage of barge capacity at present, according to the report of the Committee on Barge Transportation which was adopted at Washington, July 10, by the National Petroleum Council, and released by Walter S. Hallanan, chairman. This shortage is due to the demand for long haul barge movements of oil and products from the Gulf area, which started in the summer of 1946, and has increased substantially this year.

The oil barge and self-propelled barge equipment in the East coast area and the New York Barge Canal and tanker fleets operating on the Great Lakes appear to be adequate for present industry requirements, although there is little or no surplus.

The National Petroleum Council's Report on Petroleum Production and Crude Availability, which was expanded at the Council meeting on the 10th of July, pointed out that the producing branch of the industry has had to search for pipe with as much vigor as it normally uses in looking for new oil pools. Yet, in spite of all difficulties, the industry is now producing more oil than it ever has. If casing and line pipe were obtainable, it is the opinion of the committee that substantial quantities of oil would have been available.

Due to steel shortages, many proven locations must be postponed until the supply is available. As soon as tubular steel becomes available, pipeline capacity will be built up as definite projects are authorized and are only held up by the shortages of steel.

A summary of the committee's report on the current barge capacity follows:

1—Mississippi River System

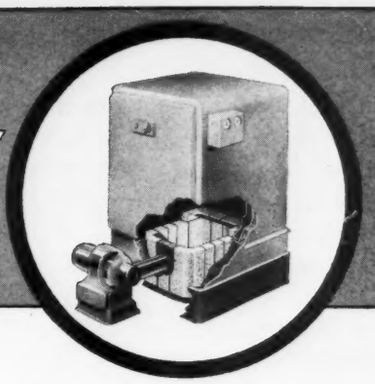
All tank barges operating on the Mississippi River System as of July 1, 1946, totalled 1,353 tank barges in operation with a total capacity of 9,920,000 barrels.

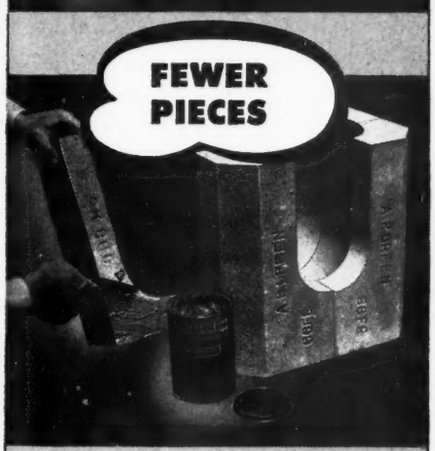
In order to estimate the net additions since July 1, 1946, a canvass was made of a number of shipyards to determine the number of barges completed and orders booked up to date of this report. The Committee concludes that the net additions, after allowing for retirements, exceed 1,000,000 barrels of barge capacity or somewhat more than a 10% increase over July 1, 1946.

The survey also indicates that towing power already built or under construction is keeping pace with the increase in barge tonnage. It has also been found that there is a marked trend toward larger sized barges and greater horsepower in towboats which will result in generally larger and more efficient tows being operated.

It also appears that terminal facilities have not been improved in efficiency consistent with the trend toward larger oil tows, some of which will carry as much as 130,000 barrels per trip. It is estimated

Streamlined Combustion Chambers





The combustion chamber is one of the major factors in obtaining the best results from an oil burner installation. The STREAMLINED COMBUSTION CHAMBER offers ease of installation, efficient operation and long, trouble-free life.

Fewer pieces are required for the STREAMLINED CHAMBER. The "L" shaped tile form the sidewalls and bottom at the same time, making an extra bottom tile unnecessary for any except very large sizes. Chamber tile are machine made—insuring uniform, snug-fitting pieces.

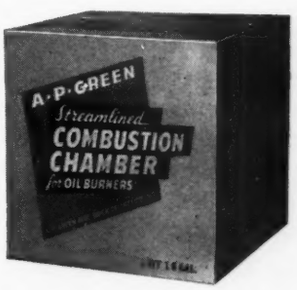
The chamber's inner contour conforms to the natural shape of the flame. The bowl has no dead corners to prevent complete combustion or cause excessive combustion rumble.

The STREAMLINED COMBUSTION CHAMBER gives long, low maintenance service. It can be readily adjusted to practically every size and type of domestic furnace. Extension or corbel tile for additional height can be furnished when requested.

INDIVIDUAL PACKAGING

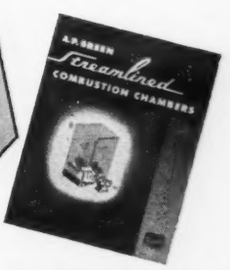
All combustion chambers are packed complete in individual cartons as illustrated or in crates. 'SAIRSET high temperature bonding mortar and extension tile can be included when specified.

Your A. P. Green distributor also stocks high temperature insulating materials to use with the STREAMLINED COMBUSTION CHAMBER.



The A. P. Green Fire Brick Company also manufactures the PERFECTO COMBUSTION CHAMBER, an economical chamber of sound design. A small number of easily fitted tile can be assembled into nearly any chamber size or shape. The PERFECTO is a practical, easily installed, economical chamber.

Look in the classified section of the telephone book for your A. P. Green distributor or write direct for further information and literature concerning STREAMLINED and PERFECTO COMBUSTION CHAMBERS.



A. P. GREEN FIRE BRICK CO.

MEXICO, MISSOURI, U. S. A.

DISTRIBUTORS IN THE PRINCIPAL CITIES OF THE WORLD

A. P. Green REFRACTORY PRODUCTS

that 20% to 30% of round trip time is consumed in port.

In spite of additions to the fleet, there is a substantial shortage of barge capacity at the present time due to the demand for long haul barge movements from the Gulf area, which started in the summer of 1946 and has increased substantially this year.

2—East Coast Equipment (Including New York State Barge Canal)

A summary of dumb barge and self-propelled barge equipment trading in East Coast area and the New York State Barge Canal shows the number of units increased from 440 in 1946, to 466 in 1947, with an increase in over-all capacity of 11.1%. Here, too, as in the Mississippi area, the trend is obviously toward substantially larger carrying capacity per unit. As of the present time, new equipment seems to be keeping pace with prevailing demands and the fleet generally appears adequate to perform the industry requirements although there is little or no surplus.

In this area, the larger self-propelled equipment is generally utilized on short coastwise hauls from tanker receiving terminals to smaller barge distribution terminals. Although some such equipment is employed in the New York State Barge Canal, the larger dumb barge predominates in that area.

There is apparently adequate towing power in this area, with a substantial portion of this demand being drawn from the general towing industry.

3—Great Lakes

A list of the American Flag tanker fleet operating on the Great Lakes as of July 1, 1946, excludes so-called transient equipment which generally operates on the N. Y. State Barge Canal or in short coastwise trade but is capable of and, at times, does operate on the Great Lakes. As of the present date, the fleet can be regarded as consisting of 17 tankers, all self-propelled, having a total capacity of approximately 675,000 barrels.

The fleet appears to be adequate for present industry requirements especially since frequent shortages of products and strikes at Great Lakes refineries this year have permitted some American vessels to carry cargoes for Canadian shippers between Canadian ports to a greater extent than is normal.

U. S. Department of Labor Fueloil Prices May

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various supplies in each market, the prices are averaged and published. Those in the table that follow were taken May 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	11.30	11.15	9.40	..
Bridgeport	10.80	10.63	9.20	..
Fall River	..	..	9.90	..
Manchester	12.30	11.80	10.20	..
New Haven	..	..	9.10	..
Portland, Me.	11.20	11.20	9.50	..
Providence	..	10.92	9.36	..
Buffalo	12.20	..	11.00	11.00
Newark	10.80	10.80	9.20	..
*New York	..	11.32	9.55	..
Philadelphia	.	10.62	9.16	..
Rochester	..	12.30	10.60	..
*Chicago	10.38	10.20	9.69	9.69
**Cleveland	..	..	..	..
**Detroit	..	10.40	9.89	9.37
*Des Moines	..	10.14	9.61	9.61
*Kansas City	..	9.79	9.18	8.95
Milwaukee	..	10.60	10.10	10.10
Minneapolis	10.70	10.70	10.00	10.00
Omaha	..	10.00	9.50	9.50
St. Louis	..	..	..	..
St. Paul	10.70	10.70	10.00	10.00
Baltimore	..	10.60	9.70	..
Norfolk	..	11.00	9.30	..
Richmond	..	11.30	9.50	..
Washington	..	11.10	10.10	..
Charleston, S. C.	..	11.80	9.50	..
Jacksonville	..	11.90	10.45	..
Savannah	..	12.18	10.53	..
**New Orleans	..	11.33	9.89	9.90
Portland, Ore.	..	10.75	9.25	5.24
***San Francisco	..	10.46	8.92	5.00
**Seattle	..	11.49	9.95	5.65

* Price includes 2% sales tax.
**Price includes 3% sales tax.
***Price includes 2½% sales tax.

Esso Suspends Conversion Oilburner Sales

STANDARD OIL COMPANY of N. J. announced a new policy in which it will no longer sell its Esso conversion oilburner for installations other than replacements. It will, however, continue to sell boiler-burner and furnace-burner units in the limited quantities called for. Since nearly all of Esso's sales were of the type now discontinued, the effect is virtually to put Esso out of the oilburner business for the present.

This step was taken as a matter of industry relations, to assure Esso's wholesale distributors that the company would not be importantly expanding its direct business while at the same time restricting their volume.

This policy is not to be applied to Gilbert & Barker burners which are sold west of the Alleghenies, or at least no such announcement has been made.

Utilities Ask Public For Opinion of Service

A PUBLIC OPINION survey, conducted by Elmo Roper, has been completed for the American Gas Association to test public reaction to gas appliances and service. Results, as published in the July issue of *Gas*, show a 10% dissatisfaction with gas central heating, of which 37% named unsatisfactory heating (uneven or insufficient heat); 34% unsatisfactory operation (plant too small, etc.); 21% no specific criticism; 34% poor operating results (improper installation, dirty); and 10% said it was too expensive. Totals exceed 100% due to more than one reason being given for dissatisfaction.

It was found that coal is 36% vulnerable to gas and oil is 25% vulnerable. Gas is only 4% vulnerable to oil.

Principal ready market for additional central heating is in areas having mild climate, the survey concluded. In California and East South Central states people were about 10% in favor of changing to central heating. In manufactured gas areas about half wanted new oilfired central heating plants and 27% wanted gas.

Features most desired or appreciated in central heating plants were ease of operation, cleanliness, best all around heat, less breakdowns and repairs, low first cost, low operating cost, and safety.

E. V. Murphree, executive vice president, on July 26 was elected president, Standard Oil Development Co., central research organization of Standard Oil Co. (N. J.), to succeed Robert P. Russell, resigned. Mr. Murphree joined Jersey Standard seventeen years ago and has contributed to many of its technical developments, including fluid catalytic cracking.

Let's Talk Facts!

What About HERCO Oil Burners?

Do HERCO Burners use substitute metals? ..... *No!*

Herco Burners are high quality gray iron and malleable castings.

Are HERCOs die-stamped or two-piece bolted? ..... *No!*

Each Herco is a rugged, one-piece heavy iron casting . . . made to last!

Do HERCOs use "off standard" motors, transformers, or fuel units? *No!*

No Herco burner has ever reached you with motor, transformer or fuel unit which did not meet Herco's high standard specifications.

Are HERCOs ever shipped "incomplete"? ..... *No!*

Not one Herco has ever been shipped without every component . . . in working order ready to install.

Are HERCOs shipped without "test firing"? ..... *No!*

Every Burner is fired before it leaves the factory . . . your guarantee of perfect performance.

Are HERCOs being produced in large quantities? ..... *No!*

To maintain the high standard of quality that has been built into every HERCO Oil Burner since 1927 . . . and to protect your reputation and Herco's . . . we will *never* sacrifice quality for quantity production. Every NO means a better burner for YOU!

HERCO OIL BURNER CORPORATION

DIVISION OF
HERR & CO., INC.

LANCASTER, PENNA.

Readers' Forum

MCDONNELL & MILLER, INC.

Chicago 11, Ill.

Editor:

I was very much interested in reading in your very fine June issue an interesting article on page 120, which shows an illustration of recommended piping for low water controls, and I thought it best to refer you to the ASME low pressure heating boiler code, 1946 edition, paragraph H-64, under Steel Boilers, and H-117 for Cast Iron Boilers. These paragraphs read as follows:

"Automatic low water fuel cut-off and/or water feeding device.

(a) It is recommended that all automatically fired steam or vapor system boilers be equipped with an automatic low water fuel cut-off and/or water feeding device so constructed that the water inlet valve cannot feed water into the boiler through the float chamber, and so located as to automatically cut off the fuel supply and/or supply requisite feed water when the surface of the water falls below a safe water line. This point shall not be lower than the bottom of the water-glass."

There are other interesting paragraphs, but the important point is covered in the paragraph quoted above. This means that you are prohibited from feeding fresh water into the float chamber of a water-column or a low water cut-off or a water feeder, and I believe you really should know about this before your readers consider following the information given in the article on page 120 of your June issue.

The reasoning behind the ASME Code is that where the fresh water enters and is first heated up, it will, when brought up to its critical temperature, lose its lime and precipitate. In addition, there is a marked difference between the temperature of the water in the boiler and in the float chamber and the city water supply, and therefore it is much better practice to feed the water into the return line, where the incoming water is tempered before it reaches the boiler itself.

There are numerous other reasons why this hook-up as shown on page 120 should not be used, but I do not believe that we need to dwell on them in this response to your article.

E. N. MCDONNELL.

Mr. McDonnell is right in his citation of the ASME code, and mention of the code recommendation should have been included in the item. The idea was submitted by a service expert who has used the piping arrangement successfully on some of his installations, and was passed along in much the same spirit that the suggestion was made: "Unorthodox piping is preferable to a stuck or inoperative low water cut-out or feeder. If the owner won't flush the mud out of his system, at least we can flush it out of his control."

◈

CONSUMERS FUEL COMPANY

Martinsburg, West Virginia

Editor:

Replying to your questionnaire, I regret that we have not been in the fueloil business long enough to give you an intelligent answer. However, I can inform you that our community has all of a sudden become oilburner conscious and that there have been installed in the last 90 days more than 100 burners. Most of these burners have gone into homes who had been using coal stokers. The City has recently passed an ordinance restricting cellar tanks to 1—275 gal. capacity.

If at a later date when you wish information and we are a little better qualified to give you the answers, do not hesitate to write us.

I certainly enjoy reading your magazine and was a subscriber several years before entering the fueloil business. It was our source of information to qualify us to supply intelligent answers to any questions put to us.

SOLOMON FINE, *Owner.*

◈

Chauncey G. Cleaver

CHAUNCEY GORDON CLEAVER, 57, sales manager, Heating Div., Wayne Home Equipment Co., Fort Wayne, Ind., died June 23. He had not been ill and his death was unexpected. In 1927 he joined Wayne Oil Burner Co. as a salesman, later was promoted to sales manager of the heating division and became sales manager of Wayne Home Equipment Co. when it was organized. He was an accomplished singer and toured with Lyceum and Chautauqua units for 16 years, before coming to Fort Wayne. Mr. Cleaver was a native of Spencer, Iowa.

Canadian Regulations On Export Of Oil Reimposed

MOVING TO ASSIST the United States in controlling exports of American petroleum products, Canada has reimposed export regulations on oil.

An official of the Department of Trade and Commerce said the move was made "as a matter of cooperation" with the United States. Recently imposed U. S. regulations strictly limited exports of petroleum to all countries other than Canada. The Canadian regulations, he said, would prevent the Dominion from becoming a "back door" through which private American exporters could channel their products.

The spokesman said the Department had "no intention" of preventing the small flow of Canadian oil now moving to Newfoundland and the British West Indies.

◈

Business Slow, Say Half of Dealers in M-H Survey

DURING JUNE, field representatives for Minneapolis-Honeywell tabulated impressions on current business conditions of 700 oilheating dealers that they interviewed in nine cities in the East and Midwest. Among all the dealers, 42% stated that their business was good or improving, 39% said that it was slow, and 12% reported definitely bad. Only 2% of the dealers were having any trouble getting all of the burners they needed, and only 8% believed that they were overstocked on burners. The table shows the answers by cities, in percent of dealers interviewed:

	BUSINESS			*Dealers Overstocked*
	Improving	*Bad*	*Slow*	
Philadelphia	51%	1%	28%	0%
New York	34	23	42	11
Boston	57	5	32	4
Springfield	0	0	76	9
Washington	0	0	89	50
Baltimore	63	15	22	9
Hartford	16	0	84	0
Cincinnati	0	0	50	0
Detroit	43	14	43	0
	42%	12%	39%	8%

It is interesting that so few dealers consider themselves overstocked, and this is obviously true, although total dealer stocks are about double what they averaged before the war. But spread over the lot they still represent only a good handful per dealer.

THERE'S *only* ONE...

WORLD KNOWN

QUIET AUTOMATIC
OIL BURNER

THE BURNER WITH BUILT-IN QUIETNESS and EFFICIENCY!

View Showing Transformer on Top

MADE IN 6 SIZES — 1 to 20 gallons per hour — A Size to Fit the Furnace

IT'S TRIED, TESTED AND APPROVED by thousands of users all over the world, and by hundreds of dealers and distributors who proved to themselves that QUALITY ALWAYS PAYS. Now, they buy in quantity because of our Exclusive Dealership Plan. Wire or write us today regarding your territory!

QUIET AUTOMATIC BURNER Corp.

Manufacturers & Engineers

49 BLOOMFIELD AVE.

NEWARK 4, N. J.

FACTORIES AT BLOOMFIELD and MONTCLAIR (Newark Suburbs)

OTHER PRODUCTS MADE BY US ARE:

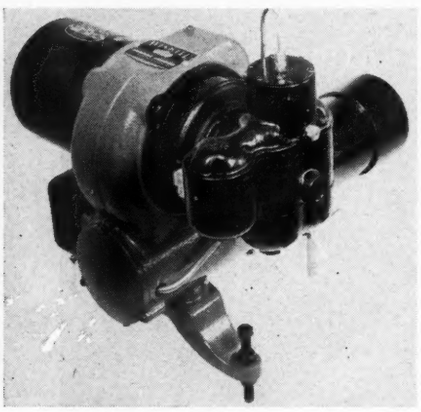
Arkay Oil Furnaces	**Winter Air Conditioning Furnaces**	**275-Gallon Oil Tanks**	**Roos Wire Die Machinery for Steel & Copper Mills**	**Tankoils and Tank Equipment**

fueloil & oil heat

New Products

Burners, Space Heaters Added To Winkler Heating Equipment

ADDITION of high and low pressure conversion oilburners and an oilburning space heater to its line of Winkler heating



equipment, has been announced by U. S. Machine Corp., Lebanon, Ind. It is claimed that the Winkler low pressure unit will burn efficiently and economically even the poorest oils over wide viscosities. Oil is metered and pre-mixed with low pressure air to secure thorough atomization before secondary air is added to support combustion. Burner has only one adjustment, auxiliary air to the fan. A newly-developed nozzle sprays a mixture of oil and air in a uniform cone through orifices large enough to avoid clogging.

The oilfired space heater will produce approximately 50,000 Btu/hr, maximum, from ½ gal. of No. 1 oil and is designed to heat small homes where adequate air circulation is provided. It combines radiant and convection heating through a specially designed parabolic deflector grille. Minimum burning rate is 1/16 gph, and tank capacity is 6 gals. The front deflector assembly slips off with hand pressure to expose entire burning chamber for cleaning. The unit has a baked enamel finish, stands 47" high, floor dimensions 32¼ x 23", weighs 150 lbs.

Orderoil Signalling Device Indicates Low Oil Supply

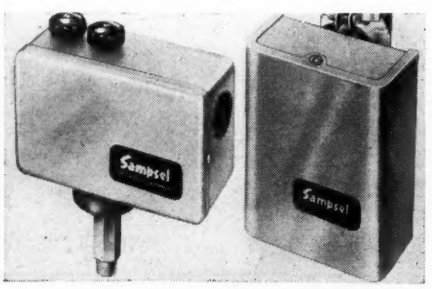
ORDEROIL, a liquid level signalling device for fueloil tanks, automatically flashes a signal light on kitchen or adjacent wall when oil level reaches a predetermined point. The reminder to order oil is continuous until the supply is replenished.

The device is constructed of aluminum with a synthetic rubber diaphragm, which is inserted between the tank and switch, preventing escape of fumes. Orderoil normally employs low voltage, but construction provides for line voltage, if desired. Orderoil is a Division of F. L. Hutchinson Co., Detroit 21, Mich.

Sampsel Adds Limit Controls

THE ADDITION of a new group of steam and hot water limit or operating controls, to round out its line of automatic controls, has been announced by Sampsel Time Control, Inc., Spring Valley, Ill. The five new units, applicable to domestic installations, all are constructed for 3-in-1 application and may be used for 3-wire damper control, 2-wire limit control or 2-wire operating control applications. They also meet requirements for reverse acting controls.

The new group includes an immersion-type steam limit control, model SL504, with a range up to 12 lbs. pressure, maintaining a differential of ¾ to 5 lbs. A straight stem, bellows type hot water control, model WL505, for vertical mounting, has an operating range from 120° to 210° F. Model WL506 is a horizontal mounting, back-angle, bi-metal, hot water limit control with a range from 120° to 220° F., while, model WL511 control of

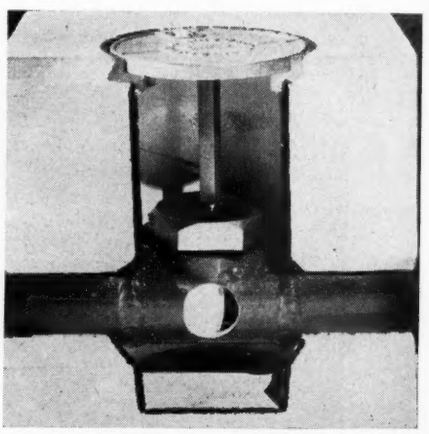


the same type, equipped with a bellows, has a range from 120° to 210° F. A strap-on hot water limit control, with a fixed differential and a range from 120° to 220° F., completes the line and is designated model WL507.

With the exception of the strap-on control, all have adjustable range and adjustable differential. Electrical rating of all controls is low or line voltage.

Combination Balancing Valve, Air Vent for Radiant Heating

PRODUCTION of a combination balancing valve and air vent, for radiant heating installations in all types of buildings, has been started by Homestead Valve Mfg. Co., Inc., Coraopolis, Pa. Radiantrol valve is similar to a butterfly control valve and can be used with pipe coils buried as deep as 8" below concrete surface because its hollow brass control stem can be cut to size. The stem extends from the valve to



a brass floor plate, 3⅝" diameter, marked to indicate open or closed position. Valve disc is built into a wrought iron body, made of a short piece of pipe end-beveled to facilitate welding into a section of the heating coil.

Venting is accomplished by removing the floor plate and stem, and turning a small cap screw on top of the valve bonnet, which is drilled to permit escape of air. The valve's fiber container is so designed that it may be used as a concrete pouring form, and even after concrete work has been completed, the valve is accessible and can be dismantled or repaired. The 1¼" size, presently available, can be adapted to both 1" and ¼" pipe.

New Richfield Oilburner Features Turbulator Head

FLAME CONTROL oilburner, announced by Richfield Mfg. Corp., New York 11, N. Y., features a patented, new type of turbulator head, which is said to achieve an unusually high efficiency of operation for

HERE'S A *new* PACKAGED BOILER

that offers

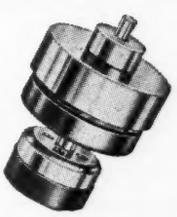
Gilbarco DEALERS

new PROFIT OPPORTUNITIES!

It's a *completely packaged* steam or hot water heating plant for average-size homes... ready to connect... easier and less costly to install! Little larger than an automatic washer, yet a heat-producer that excels far larger boilers!

The new Gilbarco Boiler Unit is compact, efficient, durable. It makes possible clean, healthier, roomier basements for users — and greater profits for dealers!

The Exclusive Economy Clutch is an important, patented feature of the oil burner that fires this boiler! It cuts soot deposits and fuel consumption... *a powerful sales factor!*



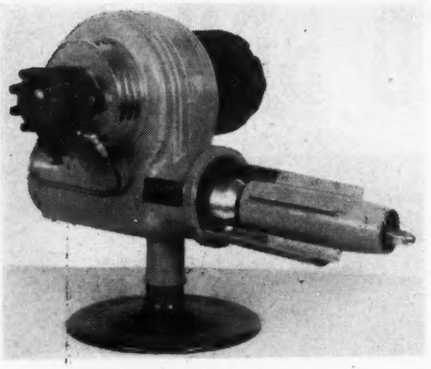
Gilbarco

WITH THE EXCLUSIVE ECONOMY CLUTCH

IMMEDIATE FRANCHISES West of the Appalachians! Profit-wise dealers will be the first in their areas to sell this outstanding boiler. Write or wire at once for information on available dealerships!

GILBERT & BARKER MANUFACTURING CO. • West Springfield, Mass.—Toronto, Canada

fire/oil coil heat



high pressure gun type oilburners over a wide gallonage range. The turbulator head accurately regulates turbulance of primary air and meters, through a special torpedo tube, a quantity of secondary air that washes directly over the nozzle. Capacity of the Flame Control burner ranges from .75 to 6 gph, in one model, changing nozzle and fan only to adapt the burner from the low to higher capacities. Laboratory and field tests have achieved readings of 10 to 14% plus CO_2, it is revealed by the manufacturer.

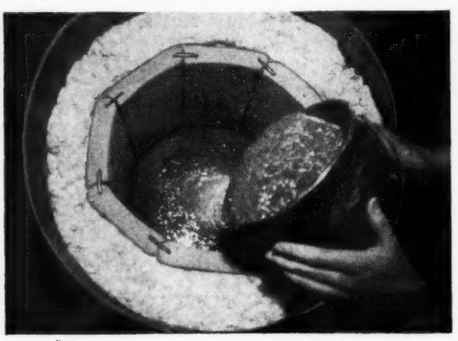
The combination of primary and secondary air is designed to permit burning of new catalytic oils without smoke. Air delivery can be changed by simple adjustments in the turbulator head. With the head it is possible to make flame shape conical, round or hollow shaped, to fit various boilers.

Try to Match these R & I Advantages

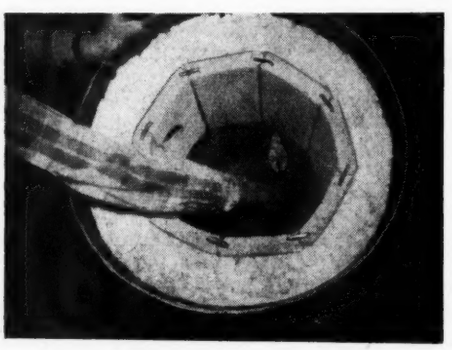
Forget, if you will, that R&I Combustion Chambers can be installed in a third the time . . . at a lower cost . . . than brick or ordinary precast chambers. Forget that the sections can be set round, rectangular or pear shape and permanently locked together in a jiffy with bonding clips without any cutting or fitting . . . and that new sections can be easily installed later if necessary.

But even if R&I had none of these features, it would still be today's outstanding combustion chamber buy because each chamber—with clips and cement for floor and burner blast tube—is packed in a strong carton which one man can carry. That does away with the danger of pieces getting lost, broken or mixed.

Ask for R&I at your supply house. Write us for Bulletin OB-98.



Pouring R & I Hearth Material for floor.



Smoothing floor.

REFRACTORY & INSULATION CORP.

116 Wall Street — New York 5, N. Y.

Chicago 4, Ill. • Newark 2, N. J. • Philadelphia 3, Pa.

R&I COMBUSTION CHAMBER

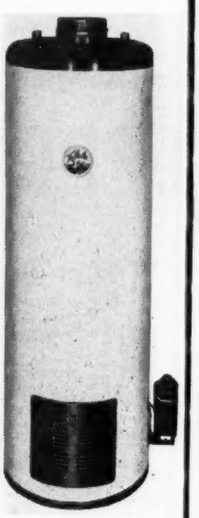
Burnrite Anti-Syphon Valve

BURNRITE Valve Mfg. Corp., Mt. Vernon, N. Y., has available an anti-syphon valve designed to prevent back syphonage and eliminate chatter and hum of motor vibration. The valve is made of brass and accommodates ½" feed lines. The rustproof, low vacuum operating unit accurately controls fuel flow, and, according to the manufacturer, operates satisfactorily on a majority of jobs without a foot valve.

Burnrite valve is installed as near as practicable to the point where the oil enters the building. It has been approved by Underwriters' Laboratories and New York Board of Standards and Appeals.

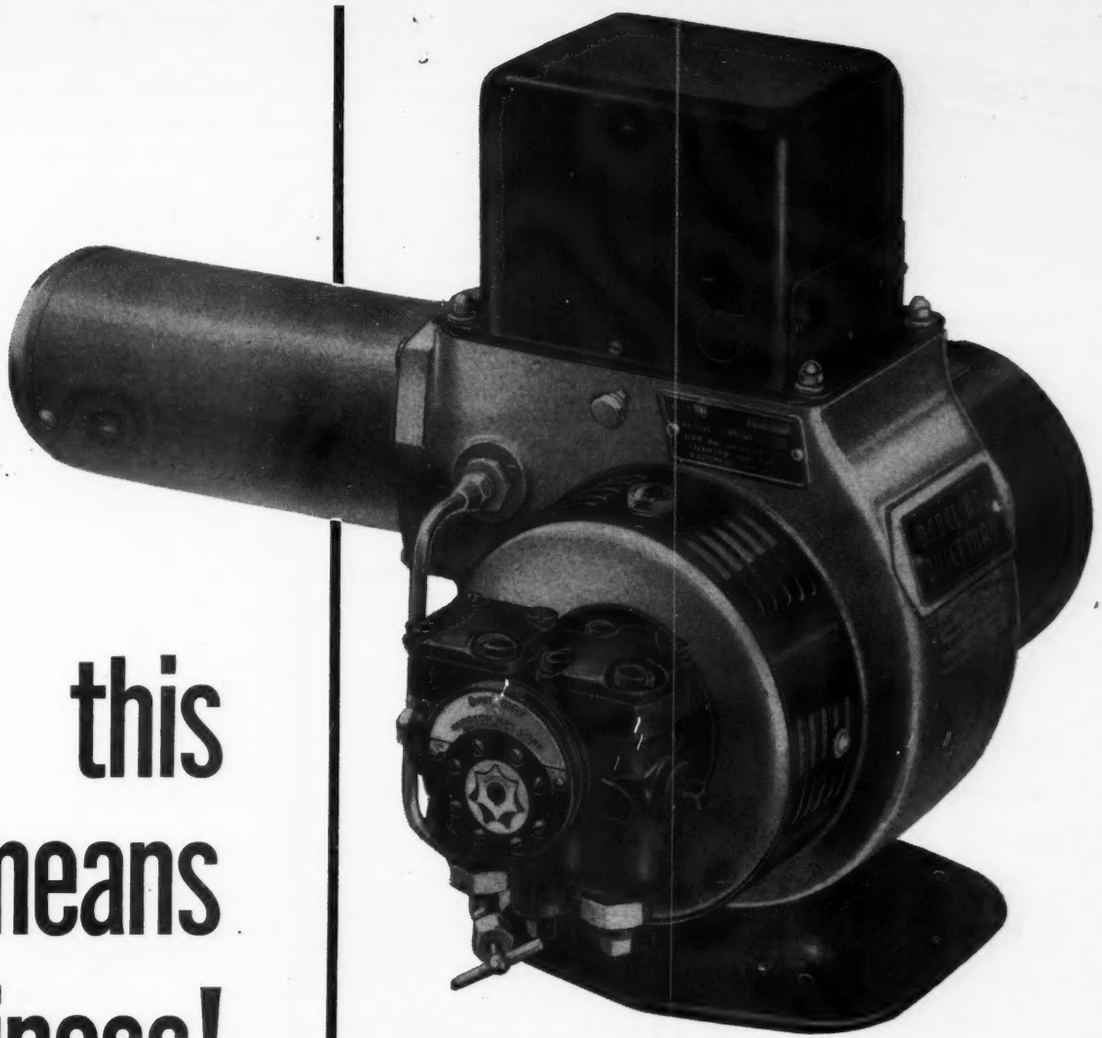
Toledo Heater Announces New Oilfired Storage Water Heater

A NEW MODEL oilfired storage water heater, introduced by Toledo Heater Co., Toledo, Ohio, is 56½" high, 22" in diameter, employs No. 1 fueloil, kerosene or range oil and has a 40 gal. capacity. The entire weight of the heater is suspended on the legs, whose leveller supports allow adjustment for level installation. Double extra heavy galvanized tank, tested to 300 lbs. for 150 lbs. working pressure, has top inlet and outlet. Inlet is fitted with a full size copper dip tube to control thermostat action. Pedestal-mounted burner can be removed easily for cleaning. The heater employs no electricity or gas for operation.



American-Standard Baseboard Panels Offered in Two Styles

TWO STYLES of baseboard radiant panels designed to be installed in place of wood baseboards, have been announced by American Radiator & Standard Sanitary Corp., Pittsburgh 30, Pa. Type R, radiant panel, and type RC, radiant-convec



this means business!

Heating homes efficiently, dependably, economically . . . that's Quiet May's business. And this oil burner **knows** its business . . . thanks to 23 full years of manufacturing experience.

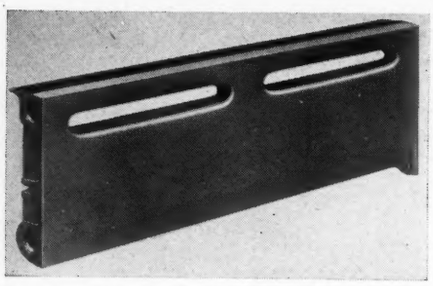
Quiet May means business for **you,** too. Never has this quality-built oil burner been so greatly in demand throughout the land.

If you are a Quiet May dealer, make the most of it. If not, write us today . . . the dealership for your territory may be available.

QUIET MAY OIL BURNER

MAY OIL BURNER
division of GEROTOR MAY CORP.
Baltimore 3, Maryland

fueloil & oil heat



for panel, illustrated, are 8" high, 2" thick and 12" or 24" long. The panel fits against the wall when installed, or can be recessed partially. When recessed, it fits into the wall to the depth of the plaster, projecting little more than an inch into the room.

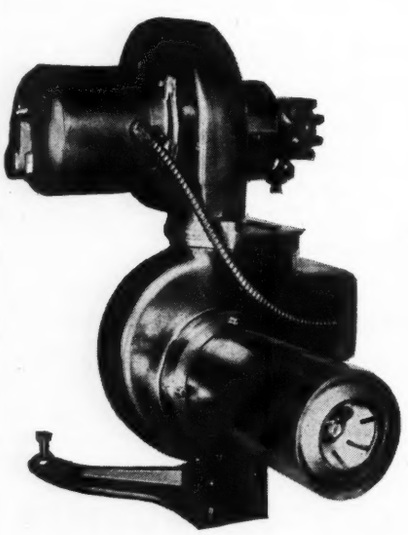
The panels are constructed with a cast-in supporting lug on either end, and a center section without end support, also is available. Special valve enclosures and matching covers leave all piping and valves readily accessible. Design of the panel is adapted to the addition of regular wood molding at top and bottom of Type R and at the top of Type RC. Smooth-finish, cast-iron construction permit painting to match surrounding walls.

about **25%**

Lower in Cost of Operation Than The Average Gun Type Oil Burner

•

IDEAL FOR REPLACEMENT BUSINESS



Scientifically Designed

BURNS

CATALYTIC FUEL OIL

CLEAN

•

No SMOKE SOOT

•

84% Combustion Efficiency

Territories Available for Dealerships

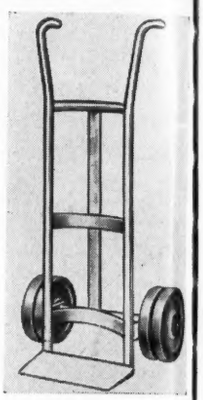
Manufactured by

H. J. HUELLER MANUFACTURING COMPANY INC.

559 ROGERS AVENUE, BROOKLYN 25, NEW YORK

Industrial Hand Truck Has Load Capacity of Half Ton

DUAL-MOUNTED solid rubber wheels are a feature of model 88 industrial hand truck, made by Handees Co., Bloomington, Ill. The truck, with a load capacity of 1000 lbs., is constructed of tubular steel, with dual, wider rubber wheels reducing danger of side wrench and tipping. Offset axle mounting and truck height of 54" provides for easier loading and allows the wheels to carry the load. Each of the four wheels is equipped with prelubricated, Chrysler Oilite bearings. A 12' web strap and 24" removable nose piece for handling larger appliances is offered as extra equipment.



Webco Tri-Pod Firebox Baffle

TWO SIZES of Webco Tri-Pod refractory baffles are distributed by A. R. Webber Co., Inc., New Haven 11, Conn. Installed

in the firebox, where it is set on top of the combustion chamber wall, the baffle is provided with a 12" plate to deflect and slow down the travel of combustion gases. One size has flexible, removable legs to accommodate combustion chambers up to 12" in diameter and a larger size is similarly equipped to be installed in chambers up to 14" in diameter. Each baffle is individually packed in a carton and protected against breakage.

Heremetal Flue Liners Protect Against Chimney Condensation

FLUE LINERS, made of heavy gauge aluminum, coated with plastic, are available from Heremetal Co., Minneapolis 11, Minn. The liners are useful where condensation and corrosion upon chimney walls and masonry are problems, and ap-

Our Tradition • Quality
Our Reputation • Integrity
—Our Pledge—

WITHOUT COMPROMISING QUALITY OR INTEGRITY—STRICT ADHERENCE TO DELIVERY COMMITMENTS

As a leading manufacturer of quality transformers for twenty-five years, we are pleased to announce completion of all inventory requirements to guarantee expanded production of domestic and export ***oil burner ignition transformers*** for the next twelve months. . . . . We welcome the opportunity of assisting you in the solution of what has been an extremely difficult procurement problem. . . . . All our products are UL approved . . . . . Standard equipment with leading manufacturers . . . . . Individually styled to the most exacting requirements.

YOUR INQUIRIES ARE INVITED

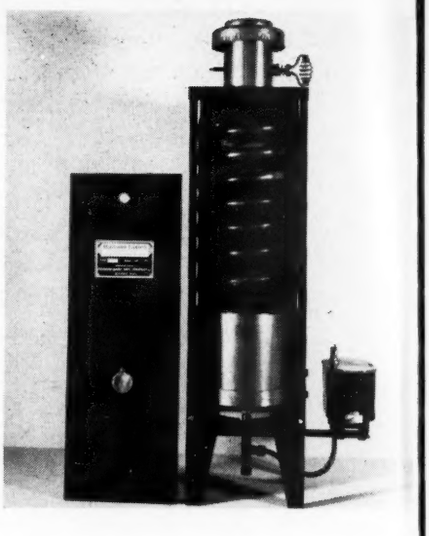
NEWARK TRANSFORMER COMPANY
PARK AND LINDEN AVENUES
LINDEN, NEW JERSEY

plication of the liners in thousands of installations has proven their effectiveness in eliminating disintegration of ordinary chimney and walls, reports the manufacturer. Liners are manufactured in sizes facilitating lining any type of new or old chimney.

On conversion jobs, liner joints are held together by inserting covered wire through holes in the pipe and twisting ends together, or by hooking a rope at the bottom of the liner and running it up through the top and lowering the entire liner through the chimney. Heremetal liners can be furnished in open and closed bottom tees with drains, and in 5", 6" and 7" diameter, 30", 15" and 7½" in length.

Oilfired Range Water Heaters Offered by Hanson-Gates

A LINE of oilfired range water heaters, produced by Hanson-Gates Mfg. Co., Inc., Reading, Mass., uses a 4½" vaporizing burner, consuming approximately 1 gal. of rangeoil or kerosene in 24 hrs. A draft hood, with damper, is furnished as standard equipment on all four models. In the

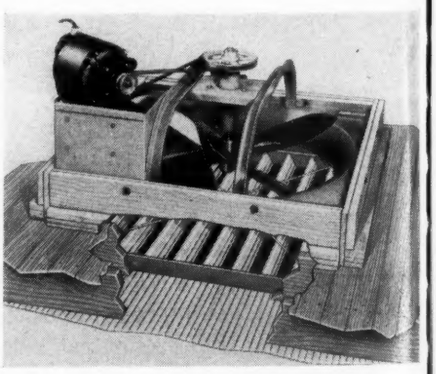


automatic models, the water temperature control valve automatically raises the fire to its highest point and holds it on high fire until adequate tank temperature has been reached, whereupon the burner returns to low fire.

Model S-KS is a complete, manually-operated unit, with its own 3 gal. tank. Three other models are designed for connection to a 55 gal. drum, or larger storage tank—model S-KV being manually-operated; model S-KVA, automatically-operated and S-KVA Twin, automatically-operated and equipped with two burners and coils. This model, burning 2 gals. every 24 hrs., is designed for 60 and 82 gal. water storage tanks. The other models are designed for 30 or 40 gal. tanks.

Silent Breeze Attic Fan Package Reduces Cost of Installation

SILENT BREEZE attic fan package, introduced by Holcomb & Hoke Mfg. Co., Inc., Indianapolis, Ind., is completely assembled at the factory, less time switch and ceiling shutter. Installation procedure is simplified, as it requires only the cutting and framing of a suitable open-



LIEBLICH OFFERS YOU THE COMPLETE 5 & 6 COMMERCIAL OIL BURNER PACKAGE

Check these six outstanding AVAILABLE FEATURES

1. 5 or 6 oil Horizontal Rotary Oil Burner
2. Four controls
3. Steel front plate cut to sketch
4. Approved Oil Heaters from our stock
5. Any other Heavy Oil specialties you require
6. Complete Engineering assistance, layout, and designs

With its 40 Years Experience in the Heating Field.

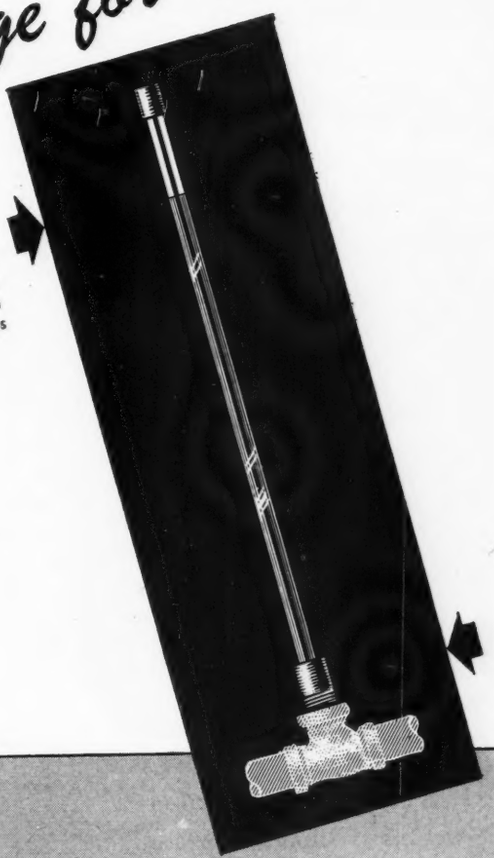
Please send information on LIEBLICH PLAN FOR DISTRIBUTORS AND DEALERS.
NAME .....
ADDRESS .....
CITY .....

LIEBLICH BURNER Service Inc.
36 West 66th. St. New York, N.Y.
Tel. TRafalgar 7-2050
DISTRIBUTORS OF
OIL BURNERS
GALLEY BURNERS
OIL BURNER CONTROLS
WEATHER CONTROLS
DRAFT CONTROLS
TANK GAUGES
24 HOUR SERVICE
COMBUSTION CHAMBERS
VIOLATIONS REMOVED

SHOMATIC

NEW

Handy Gauge for Home Fuel Tanks!



● Always registers accurately ● No moving parts ● Of brass and extruded plastic, it fits on any fuel tank in 15 minutes —lasts a lifetime.

● Shomatic saves fuel loss and fire hazard ● Its safety feature automatically shuts off gauge, if broken.

Delights your Customers! Pays you Extra Profits!

SHOMATIC Fuel Gauge SHOWS + SAVES

Here is an item your fuel oil customers will welcome. Present installations prove it. Shomatic is just the thing to show your present and prospective customers, when making late summer calls. Sells on sight. Gets many new fuel customers. Retails for only $3.00, installed. Supply of mailing folders for your customer lists furnished free. To "cash in" on this big money-maker, good will builder.

Folders, furnished free with quantity orders keep your installation crew busy

Saf-T-Visi Gauge Corp.
P. O. Box 3659
Miami, Fla.
OK - Send me full details on Shomatic.

NAME _____

ADDRESS _____

CITY _____ STATE _____

Get sample of **FREE** *Folder & Dealer Price*

SAF-T-VISI GAUGE CORP. MIAMI, FLA.

ing in the attic floor, installing the shutter, placing the fan unit in position, wiring and providing additional outlet louvre area, where necessary. Compact design of the unit permits installation in any home having 24", or more, clearance between the attic floor and roof.

The complete package, furnished in three sizes with fans of 24", 30" and 36" diameter, consists of a Silent Breeze ventilating fan, suction chamber, automatic ceiling shutter and electric motor. A 24-hour time switch is available as an extra.

Superflame Range Burner Features Horizontal Flame

SUPERFLAME range burners, designed for modernization of coal or wood ranges, are produced by Queen Stove Works, Inc., Albert Lea, Minn. The burner consumes 2 gals. in a 24 hr. period and is designed to maintain a 300° oven temperature for 12 hours on 2 gals. of No. 1 oil. A constant level valve, mounted on a separate floor stand, can be connected with a 3 gal. white enamel wall tank, or to a larger outside supply tank. Secondary air vents at the top of the burner direct high fire horizontally along the entire width of the cooking top, while primary air entry is entirely within the walls below the burner throat to eliminate formation of carbon deposits. An automatic starting control on the 15 lb. burner brings the flame to full cooking heat quickly and closes when burner reaches operating temperature. A hot water coil, requiring a 1" to ¾" reducer for connection to a range boiler, also is available for use with the burner.

SPARK invites dealer inquiries

While current production of SPARK oil burning heaters is allocated to our "old" dealers, *now* is the time for dealers in new territories to plan for future SPARK business.

SPARK is the Pacific Coast's pioneer oil burning heater. SPARK has the features that sell . . . pleasing appearance, visible flame, instant heat, efficient, low-cost operation.

Interested dealers may address replies to:

HAMMER-BRAY CO. LTD.
2619 E. 12th ST. OAKLAND 1, CALIF.

Correction

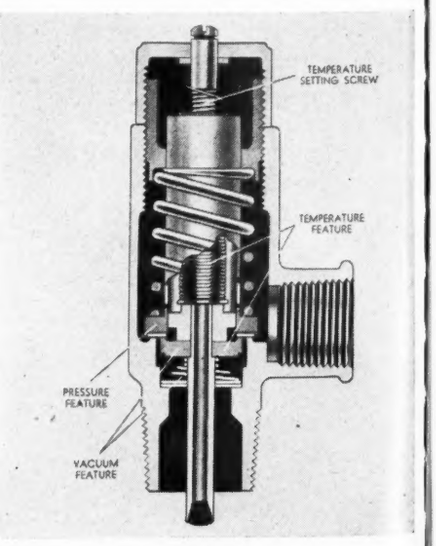
VIKING humidifier, reviewed on page 132 of the July issue of FUELOIL & OIL HEAT, was incorrectly referred to as model 1920. Correct designation of this unit, made by Viking Air Conditioning Corp., Cleveland 2, Ohio, is model 1120.

Wilson Spider-Web Natural Hair Filter

SPIDER-WEB filters, developed by Wilson & Co., Inc., Chicago 9, Ill., use natural hair to filter dirt and dust from the air. The filter has a double action, on the inlet side trapping large particles of dust and retaining finer dust and pollen particles on the outlet side where the filter element is of closer texture and treated with a viscous oil. Standard sizes are 20 in. x 20 in., 20 in. x 25 in., 16 in. x 20 in., 16 in. x 25 in., 20 in. x 30 in., 10 in. x 20 in. in 1 in. and 2 in. thicknesses.

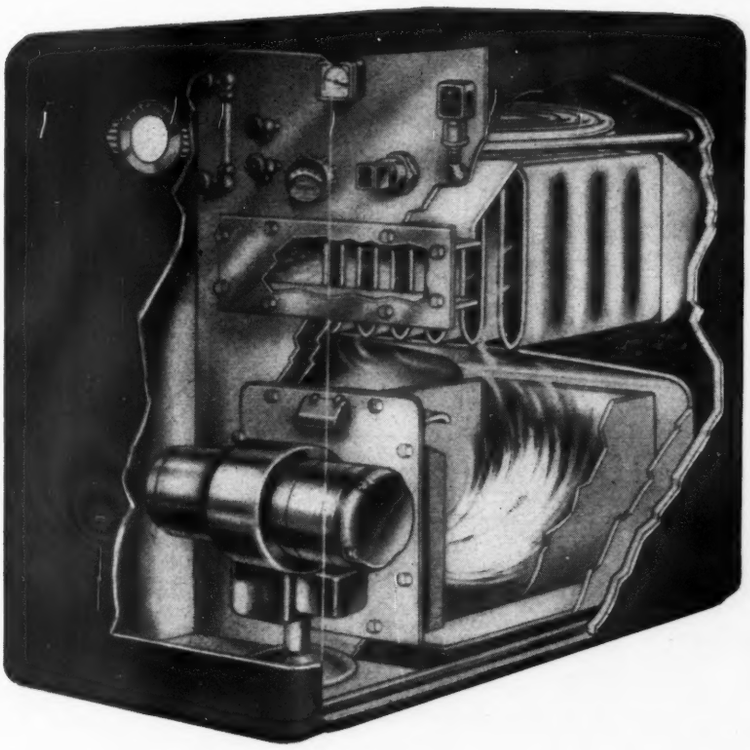
New Hot Water Relief Valve Resistant to Rust and Sediment

THE TD46 pressure, temperature and vacuum relief valve, introduced by Jerguson Gage & Valve Co., Somerville, Mass., features for its temperature relief



The New
TRANSATHERM

All welded alloy steel boiler
Gas or Oil Fired
for Steam, Vapor, or Hot Water



Designed to meet the post war need for a corrosion resistant, all welded, alloy steel boiler, Transatherm meets the most rigid tests of economy and efficiency.

Users are most enthusiastic over the new Transatherm boiler as now manufactured by Utica Structural Steel, Inc., and Heat Transfer Products, Inc. These boilers are made from new tools and dies and are expertly welded by modern methods and machines. Each boiler is thoroughly tested.

Prompt shipments can be made in all sizes from 320 to 700 net standing feet of steam radiation and from 512 to 1120 net feet hot water radiation.

Write for prices and details.

Transatherm Distributors, Inc.

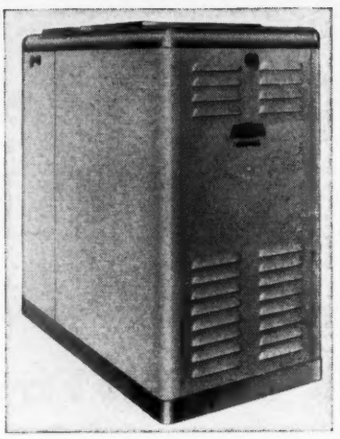
74 Trinity Place (WH 4-8230 / BO 9-8846) **New York 6, N. Y.**

control a bellows assembly located above the valve seat to prevent rust and sediment action. On rising temperature, the bellows expand until the valve opens to permit entrance of water into the bellows chamber. The snap action valve then opens for immediate discharge of heated water. When water cools, reverse action takes place.

Pressure relief occurs when pressure exceeds adjusted setting point, while the vacuum relief valve opens when vacuum exceeds 3". All controls operate independently. Capacity temperature rating is 375,000 Btu.

Wayne Announces Thermo-White Oilburning Winter Conditioner

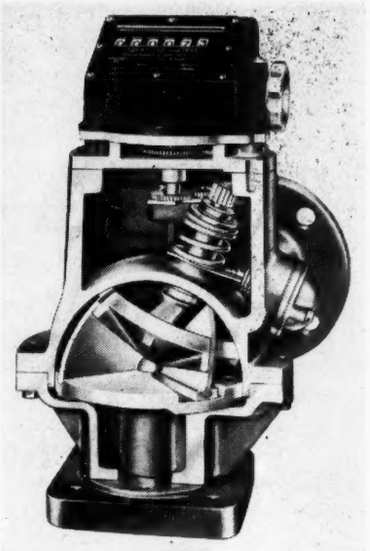
THERMO-WHITE, a new oilburning winter air conditioning furnace unit, announced by Wayne Home Equipment Co., Inc., Fort Wayne, Ind., is finished in white enamel, with forest green trim, to allow color matching with Wayne water heaters, softeners and water systems. The furnace is available in 112,000 and 160,000 Btu output at the bonnet, and is fired with a Wayne Thermatic pressure oilburner.



The units have been distributed in token shipments to dealers and are included in the merchandising program planned under the company's Partnership Plan for Wayne wholesalers and dealers.

Granco Rotary Meter Designed For Loading Racks, Bulk Plants

BULLETIN 521 describes the Granco rotary positive displacement meter, made by Granberg Corp., Oakland 8, Calif. Designed especially for loading racks, truck and bulk plant installations, the meter housing is fabricated so that ordinary pipe strain does not interfere with accuracy or



performance. The meter's patented mechanical movement is simple and adjustment is accomplished through increases and decreases of volumetric displacement. Adjustment is free from leakage, lost motion and backlash, is easily accessible, visible and uncomplicated, according to the manufacturer.

Standard counter is 6 figure totalizer, reset 4 figure and red tenth wheel. Other available counters have vertical dials, 8"

TIME PROVED DESIGN — TIME PROVED PERFORMANCE

make BECKETT Commodore Burners favored

by oil heating dealers—

by satisfied users

SOME COMMODORE FEATURES—

Progressive air rotation—positive air delivery makes cleaner, quieter, hotter fires

More dependable ignition

Lower nozzle temperature

Automatic damper control—saves fuel

High tension cable eliminated

All rotating parts dynamically balanced

Motor and pump shafts accurately aligned

Four main assemblies—accessible, special tools not needed

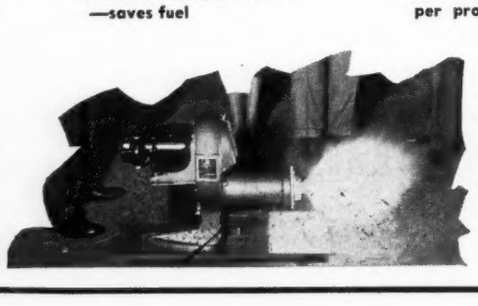
Easy installation and adjustments—tamper proof

Finger-tip air control—tamper proof

Yes, the Beckett Commodore burner is the result of experienced oil burner engineering, proved again and again in practical use. Beckett Commodore burners are built, not only to give long, dependable service, but to exceed the most rigorous conditions they will meet in actual use.

Built for service, they save fuel every minute of the heating season—starting, running and stopping. Smart, modern design, accurate alignment of motor and pump shafts and dynamically balanced rotating parts, insuring freedom from vibration . . . automatic damper control, the fuel miser . . . are but a few of its outstanding advantages.

Compare the Beckett Commodore against the field—in design—workmanship—you'll see why users are enthusiastic—why every Beckett Commodore in use helps sell others.



Beckett Commodore burns outdoors without aid of fire box—ignition cut off—retains normal flame.

THE R. W. BECKETT CORPORATION

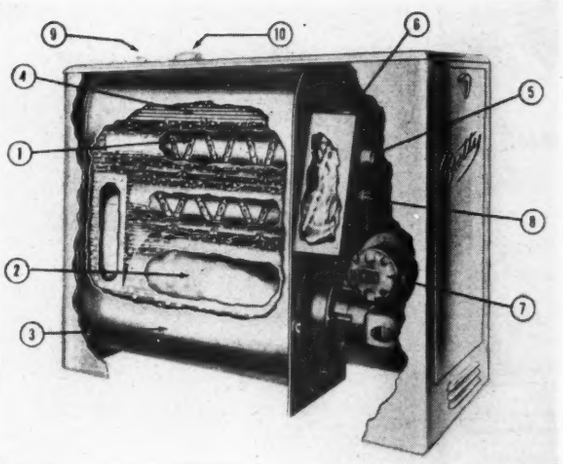
ELYRIA, OHIO

For homes
churches
schools
apartments
business buildings
special applications

COMMODORE Oil Burners

WITH TUBES LIKE A BATTLESHIP'S BOILER

Official U. S. Navy Photo.



1. *Galloway Tubes* provide fast, positive vertical circulation.
2. Extra large furnace gives complete heat release—maximum heat absorption.
3. Scotch Marine Design—water completely surrounds furnace.
4. Abundant hot water from instantaneous or tank type water heater. Circulation from Galloway Tubes flows between coils, increases heat transfer.
5. Correctly positioned opening for oil burner insures proper installation, minimizes wiring.
6. Screw-in type low-water cut-off simplifies installation.
7. Flange-mounted standard type oil burner provides packaged unit application.
8. Removing one thumb-screw opens clean-out door, exposing all heating surfaces.
9. Safety valve outlet.
10. Steam or water outlet thru split jacket.

Sizes: 320 to 2000 sq. ft. of radiation.

ONLY THE CROTTY BOILER HAS GALLOWAY TUBES

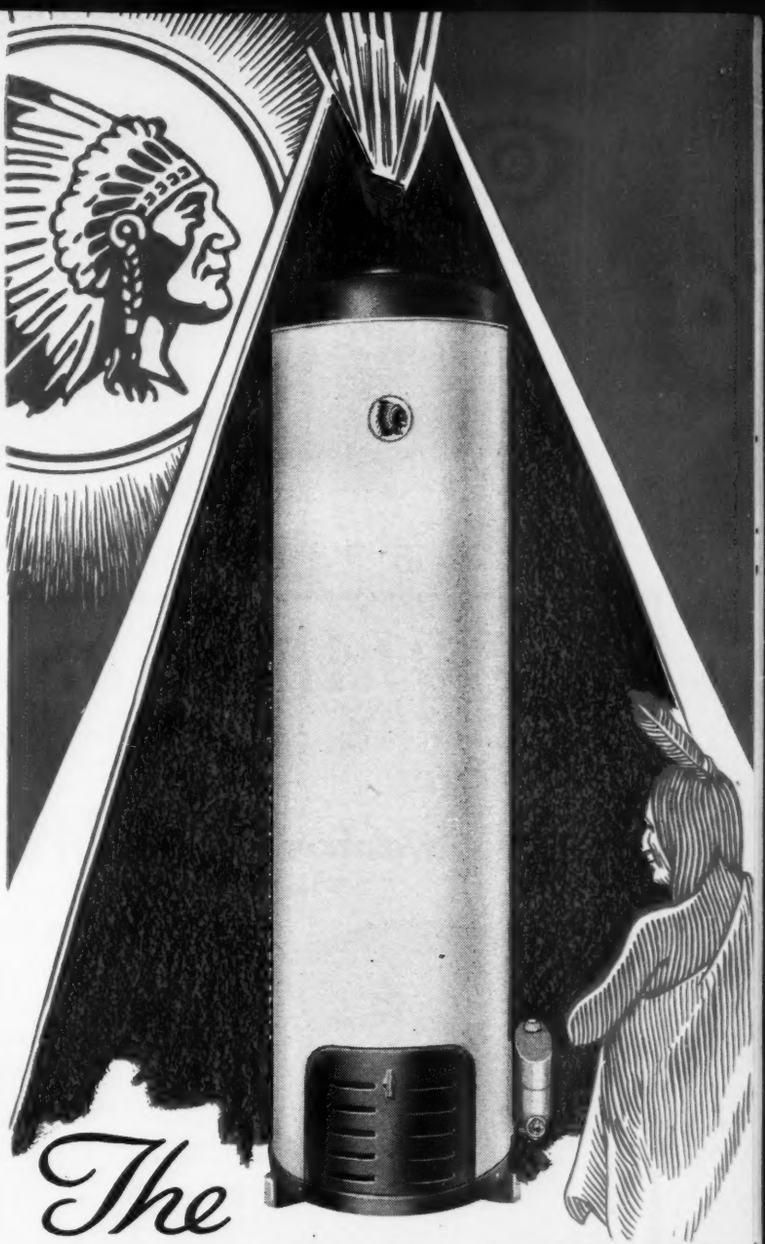
The Crotty teams the Scotch Marine Boiler to the Galloway Tube, carefully applying this century-proved principle to a residential boiler. In marine use, the Galloway Tube has proved rugged and reliable under poorest water conditions. Adapted to the Home Heat Generator, this exclusive Crotty feature has given satisfaction in thousands of homes. We have testimonials to prove it.

The Crotty has no trick gadgets—plenty of Furnace Volume—perfect balance between gas volume and flue area. Fast, positive vertical circulation. All Oil Burners work well with the Crotty. It's easy to install. Immediate Deliveries. Write for information. On display at Architects Samples Corporation, 101 Park Ave., N. Y.

CROTTY BOILER CORPORATION

FLUSHING, NEW YORK

Sales Office: 60 E. 42 St., N. Y. 17; and Principal Cities.



The CHIEF Oil Fired WATER HEATER

The silent-operating "Chief" is built for years of trouble-free operation . . . No moving parts to wear out . . . Completely safe, approved by Underwriters Laboratories, Inc. Economical too—its thrifty performance will permit additional household savings . . . Uses No. 1 fuel oil. The "Chief" is attractively finished in a high lustre white, designed to beautify any home.

Naturally, you will want to know more about the "Chief"—drop us a card or letter TODAY for full particulars. Descriptive literature upon request.

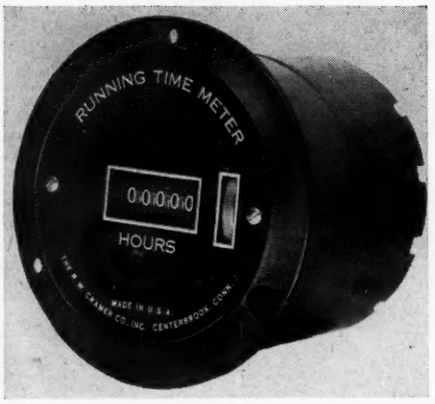
MT. PLEASANT HEATER CORP.

710 S. OAK ST. • MT. PLEASANT, MICH.

and 10" diameters, large numeral horizontal, printing and pre-control types.

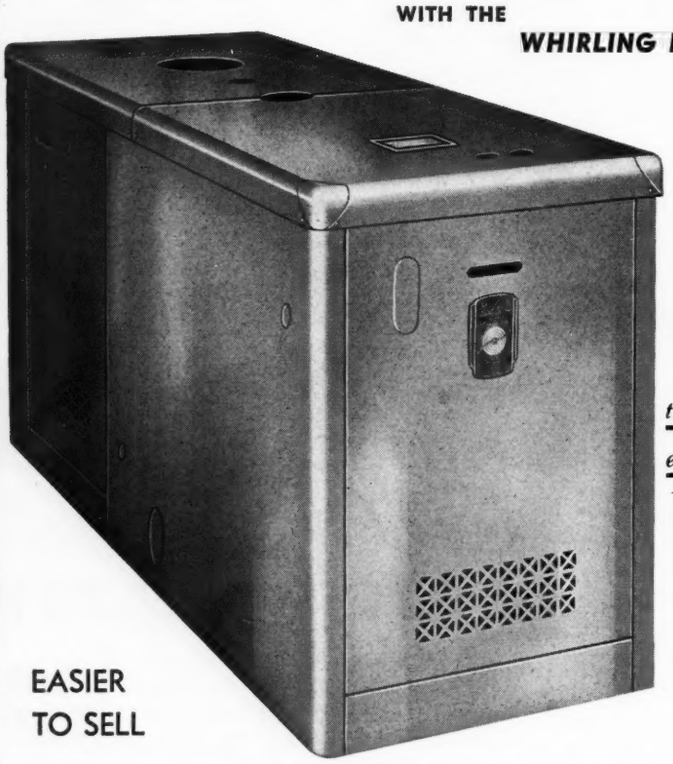
Cramer Running Time Meter Registers Operating Time

TIME TOTALIZER or running time meter, offered by R. W. Cramer Co., Inc., Centerbrook, Conn., is designed for use on AC circuits and automatically registers total operating or idle time of any circuit, machine or system to which it is connected. The five digit revolution type counter, which can be reset to zero, indicates in tenths up to 10,000 hours and then repeats.



Type E5 is suitable for table use; type E6, enclosed in metal housing arranged for conduit connection, is furnished complete with hinged cover and hasp for padlocking; Type E7, illustrated, is a 3¾" diameter instrument, enclosed in a combination die-cast and bakelite housing, for flush mounting with knob reset accessible from the front. Meters, equipped with Cramer synchronous motors of the slow speed, self starting type, can be furnished for 60 or 50 cycle frequency, 110 or 220 volts.

Nothing like it
ON THE MARKET!
The Bethlehem DYNATHERM
WITH THE WHIRLING FLAME



the finest, smartest, most thoroughly engineered package unit ever built!

EASIER TO SELL

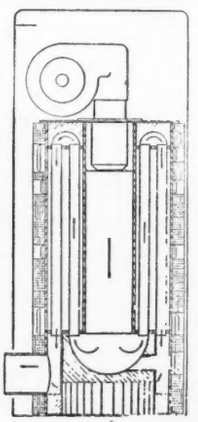
A few exclusive BETHLEHEM DYNATHERM territory FRANCHISES are still available

The Bethlehem Dynatherm assures an ever-growing profitable business for you. An entirely new principle of oil burning, the result of a new era in modern living—demanding the best at a low price made possible only by the most scientific mass production methods and volume buying—putting the comfort and convenience of automatic oil heat within the reach of everyone! There's no cost . . . no obligation . . . in investigating this profitable Bethlehem Dynatherm Franchise.

THE BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

Heatmaster Boiler-Burner Unit Available in Eight Models

EIGHT MODELS of Heatmaster boiler-burner units, offered by Heatmaster Boiler Div., Pressure Vessel Service, Inc., Detroit 26, Mich., range in size from 260 to 1450 sq. ft. steam. The units are completely equipped with oil-burner and thermostat, limit and low water controls, are factory-tested and all interior wiring completed prior to shipment.



Construction is welded steel, three pass design, adaptable for steam, vapor, hot water or warm air systems. The neutral color cabinet has been designed to permit easy dismantling for access to burner, controls and connections. A sight glass affords visibility for fire settings.

New Raytheon Precipitator Announced for Domestic Use

THE HOME PRECIPITATOR, announced by Raytheon Mfg. Co., Waltham, Mass., is a small version of the company's industrial precipitator, designed for domestic installation for use with new or existing winter air conditioning systems. Bureau of Standards tests are said to have shown an operating efficiency of 85 to 90%.

The precipitator is attached to the air intake of the furnace or air conditioning unit, and consists of a power pack and ionizer collector cell. Power pack utilizes regular house current to energize the ion-

Leading jobbers stock C&L Hoffman water heaters for your convenience. Ordering from your jobber gives you four profit-making advantages.

1. You save warehousing costs.
2. You get fast, dependable service.
3. You save floor space for sales-building displays.
4. You get the help of a fellow businessman who knows your problems.

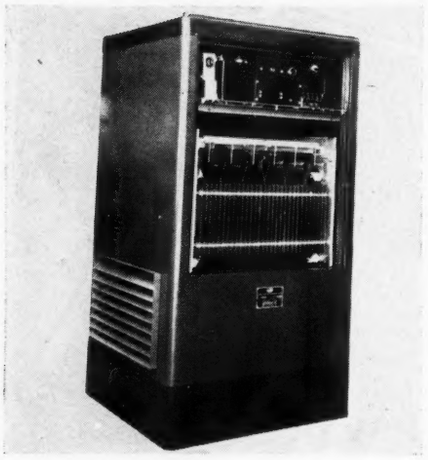
Always specify C&L HOFFMAN *from your jobber.* Write for descriptive literature and the name of the jobber nearest you.

The C&L Hoffman Oil Fired automatic storage water heater is designed for maximum economy, engineered for dependability. Beautifully finished in lustrous baked white enamel with black trim. Approved by National Board of Fire Underwriters.

OTHER C&L PRODUCTS: C&L BLOW TORCHES, FIRE POTS • C&L LAMNECK FURNACE PIPE & FITTINGS • BUCKEYE CORN CRIBS, GRAIN BINS • SILVER SHIELD SILOS

CLAYTON & LAMBERT MFG. CO.

1735 DIXIE HIGHWAY • LOUISVILLE 10, KY.



izer. Air is drawn through the unit by the furnace fan, and as airborne particles pass through an electrostatic field they become positively charged. When the air passes down between vertical collector plates, the charged dust particles are attracted to them. Collector plates, when necessary, can be washed by turning a valve.

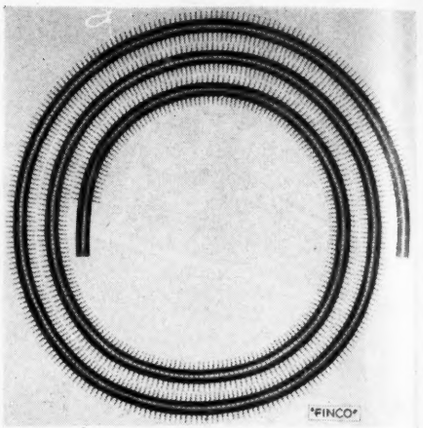
Measurements of the unit are 54" high, 28" wide and 27" deep, weight, 300 lbs. Unit is being made available to furnace manufacturers for distribution through their dealers. Only one external connection to a 115 volt, 60 cycle source is required to put the unit, with a rating of 1200 cfm., in operation. Power consumptions is 50 watts per hr.

Liquid Soot, Sludge Remover Announced by XZIT Sales Co.

A LIQUID FUELOIL TREATMENT has been announced by XZIT Sales Co., Los Angeles, Cal., and Hoboken, N. J. Explaining its use, the manufacturer states that XZIT is added to the fueloil in the tank, where it dissolves sludge, and in the process of burning, fueloil, treated with XZIT, generates a chemical gas which reduces soot to fine carbon particles, which generally are carried away by the smoke. The product, harmless to metals and non-corroding, is packed in quart and pint cans and is available also in drums and half drums. One quart is the recommended treatment for 500 gals. of fueloil.

Coiled Finned Tubing Available

COILED FINNED TUBING, of the recently developed serrated fin type, has been made available by Fintube Coil Corp., Alhambra, Cal., for general industrial use. FIN-



CO flat or pancake coils are now formed out of tubing with serrated fins as high as 5/8", by a new bending technique without crushing or distortion of the fins. Available coils include either ferrous or non-ferrous materials, in a wide range of tube sizes, fin heights, fin spacings and coil diameters.

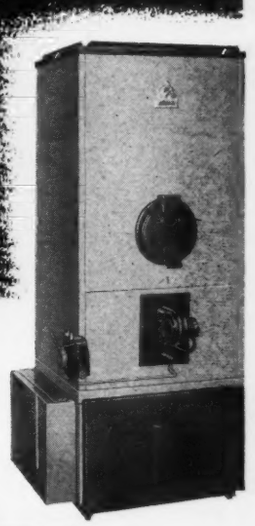
Manufacturer quotes an availability date of 60 days, or better, and claims substantial savings in fabrication of condensers, evaporators, unit heaters and coolers, and other types of extended surface equipment.

it's QUICK
it's EASY

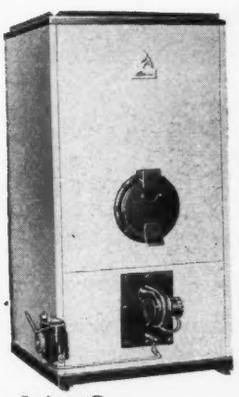
TO INSTALL OR REMOVE THE COMPLETE BURNER

from ANY Luxaire

Vaporizing Pot Type Oil Fired Unit



Series VH
Oil Fired, Steel Utility
Air Conditioning Unit



Series VG
Oil Fired, Steel
Gravity Unit

Series VA
Oil Fired, Steel
Air Conditioning Unit

Just disconnect fuel line—remove 8 sheet metal screws . . . a cabinet panel . . . loosen 2 thumb screws—and the entire burner assembly can be lifted out bodily. It's just that quick and easy.

UNDERWRITERS' LABORATORIES APPROVED.

Sturdy, enameled steel cabinets . . . cabinet floors with channel supports that do away with basement platforms and grouting . . . Steel heating elements with automatic, submerged arc welded seams . . . high, low flame baffles assure smokeless combustion . . . stainless steel flame deflector—easily removed.

. . . these "stand-out" features make it easy for you to sell, install and service Luxaire vaporizing pot-type oil fired units.

THE C·A·OLSEN MANUFACTURING COMPANY

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

Fueloil oil heat

Survey Shows Ample Refining Capacity

REFINING CAPACITY is no bottleneck in the supplying of petroleum products at present, according to a report transmitted to the National Petroleum Council by Dr. Robert E. Wilson, chairman of its Committee on Refining Capacity. The latest survey was conducted by Fred Van Covern, head of American Petroleum Institute's Statistical Department, with the cooperation of the Bureau of Mines.

Refining capacity capable of handling 5,648,000 barrels a day was found by the committee. Since actual refinery runs have been averaging 5,130,000 barrels per day, or 91% of this capacity, it is not likely that there will be any acute shortage of capacity. There still are 79,000 barrels a day of refinery capacity shut down by strikes, the report states, which have removed more than 13,000,000 barrels of products from the market between January 1 and June 15.

Recent refinery runs are substantially in excess of the peak of the war years, the report points out. However, operation of refineries at 91% of nationwide capacity does not, in the view of the Committee, leave much of a factor of safety, especially since much of the idle refinery capacity is poorly located for transportation purposes or unable to handle the high-sulfur crudes which constitute the main additional supply available today.

The report also summarizes the additional capacity which is expected to be completed each quarter between April 1, 1947, and June 30, 1948. This totals 267,500 barrels of daily crude-running capacity of which 54,700 was scheduled for completion prior to July 1. This amount of increased capacity is regarded as not as large as might have been anticipated in view of the large sums currently being expended in refinery construction.

The report indicates that the expansion of refinery capacity has been held back by "material shortages and by the general governmental policy, both during and since the war, of discouraging or refusing approval of building projects whose primary purpose was increasing capacity."

Enpo Engineered Power Motors

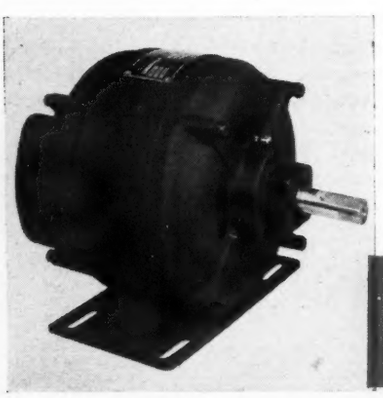
For YOUR oilburner

★ Streamlined styling for your design of tomorrow.

★ Compactness and lightweight lend symmetry to the appearance of your product.

★ High starting torque, power reserve, and ample overload protection assures you of quiet, smooth performance.

★ Simplicity of design makes for years of trouble-free service.



ENPO motors, built to quality instead of price, are also produced in resilient and rigid mountings in single and polyphases, in sizes from 1/6 to 1/3 horsepower.

ENPO leadership in Engineering, Design, and Production "Know-how", gives you the best in workmanship and performance for customer satisfaction.

Your inquiries and special engineering problems will be welcomed

Manufactured by
THE PIQUA MACHINE & MANUFACTURING CO.
YOUNG & COLLEGE STS. PIQUA, OHIO

WE—

Just Can't Help Crowing—

Because—

We are *NOW ALSO*—

EASTERN SEABOARD STATES JOBBER REPRESENTATIVES FOR—

EDDINGTON METAL SPECIALTY COMPANY

P. O. BOX K, EDDINGTON, PENNA.

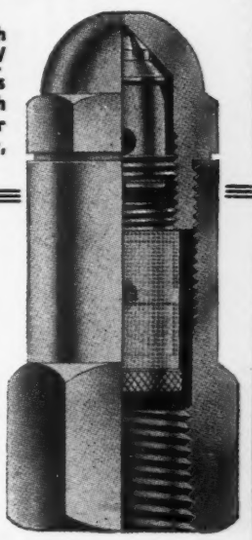
—substantial manufacturers of the well known and highly respected line of oil burner accessories consisting of:

EDCO Stainless Steel NOZZLES
EDCO Brass Nozzle ADAPTERS
EDCO Wire Mesh STRAINERS
EDCO Pressure Regulating VALVES
EDCO Serviceman's NOZZLE KITS
EDCO AIR CONES and STABILIZERS

Dealers—
See Your JOBBER or write us—TODAY.

Jobbers:

As ALWAYS our policy is to sell through jobbers. STOCK EDCO PRODUCTS NOW —and be prepared to fill dealers orders being created increasingly well through much advertising. EDCO is no stranger and for many years, *the real pioneer*, enjoys fine sales volume.



EDCO

Send For New Prices and Booklets, . . . NOW! See manufacturers' advertisements elsewhere in this Magazine.

ALSO *William J.* **DEBLER and SONS**

AUTOMATIC HEAT DEVICES

EASTERN FACTORY REPRESENTATIVES

GENERAL FUEL OIL FILTERS

619 Acorn Street, Phila. 28, Pa. 790 Broad St., Newark 2, N. J. 1284 Beacon St., Brookline 46, Mass.

Manufacturers Activities

Rex Clay Products Opens Branch at Albany, N. Y.

REX CLAY PRODUCTS CO., Detroit, has opened an eastern branch office at Albany, N. Y., where it is planned to manufacture and stock the company's complete line of Rex Roto combustion chambers for oilburners. The company features a quick-heating combustion chamber in a variety of shapes and sizes, which are installed without cement. The branch at 68 Tivoli St., Albany, will carry the complete line of baffles, insulating cement fill and fire brick as well as combustion chambers.

Perfex Marks Thirteenth Anniversary with Party

THE THIRTEENTH ANNIVERSARY of Perfex Corp., Milwaukee, Wis., as presently organized, was celebrated on June 6 with a birthday party at the Plankinton Hotel. J. K. Luthe, founder of Perfex and chairman of the board, paid tribute to 10, 15 and 20 year employees for their loyal and helpful cooperation. C. E. Lewis, president, in his address, emphasized the part played by Mr. Luthe in making Perfex today the source of livelihood for 1,800 employees and their families.

Arnold Olsen, personnel director, acted as toastmaster for the gathering, which heard songs rendered by the Tripoli Shrine Chanters, Madison, Wis. V. R. Tate, vice president, presented ten year service pins to 28 employees; fifteen year service pins to 4 employees; while 8 received pins denoting twenty years' service.

Timken Meetings Acquaint Dealers With Sales Plans

A SERIES of retail sales meetings, sponsored by Timken Silent Automatic Div., Timken-Detroit Axle Co., Jackson, Mich., began in Detroit on July 28 and ended in Syracuse on August 8. Meetings also were held during this period in Indianapolis, Chicago, Minneapolis, Des Moines, Toronto, Boston, Philadelphia and New York.

All meetings were of one day duration and arrangements had been made to bring Timken dealers and their salesmen from all sections to at least one of the meetings. Purpose of the meetings was to bring retail sales personnel up-to-date on sales and advertising strategy.

Timken's Chappell, Crawford, Cooper and Marberry plan conference programs.

T. A. Crawford, general manager; R. M. Marberry, director of advertising and W. J. Chappell, assistant sales manager, conducted the meetings.

Eckhart Model Plant Now Producing Equipment

ONE OF THE FINEST oilheating equipment plants in the country has been opened by the Eckhart Manufacturing Co., at 470 First Avenue, West, Roselle, N. J., and now is in production on a full line of oilheating equipment, according to Arnold Eckhart, president and design en-

SUMMERTIME IS General Time

Summertime can be a busy season for those who actively push GENERAL filters. Get your customers lined up with a new fuel oil filter before the next heating season, and they'll be glad you recommended the *best* fuel oil filter available, GENERAL.

write

direct or to your nearest jobber for information on the GENERAL line of fuel oil filters.

FACTORY REPRESENTATIVES: WILLIAM J. DEBLER & SONS, Newark, N. J., Philadelphia, Pa., Brookline, Mass.; V. B. KATHE, Vancouver, Wash.; W. V. NUTTALL COMPANY, Salt Lake City, Utah; B. E. HOWENSTEIN, St. Louis, Mo.; L. E. SCHULEIN COMPANY, Chicago, Illinois; GRANSE CORPORATION, St. Paul, Minn.; RICHARD BARTHELMESS SALES COMPANY, Jacksonville, Fla.; T. C. FRENCH COMPANY, Akron, Ohio; A. G. ALLEN COMPANY, Indianapolis, Ind.; JEFF A. HEDDON COMPANY, Atlanta, Georgia.

GENERAL FILTERS INCORPORATED **GENERAL FUEL OIL FILTER** 12890 WESTWOOD AVE. DETROIT 23, MICHIGAN

CANADIAN FACTORY BRANCH: GENERAL FILTERS CANADA, 173 STRACHAN AVE. • TORONTO 10, ONTARIO

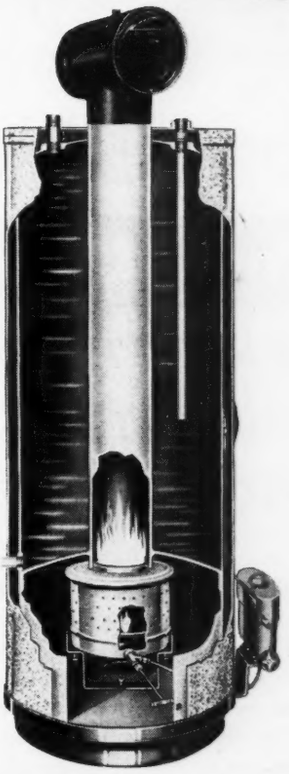
A EXPERIENCE IS THE BEST TEACHER.

B OVER A TWENTY-SIX YEAR PERIOD DEALERS HAVE LEARNED ABC EQUIPMENT IS EASIER TO SELL.

C THAT'S WHY TODAY MORE DEALERS THAN EVER BEFORE ARE FEATURING . . .

ABC Oil Burner

The continually growing popularity of ABC oil burning equipment is definite proof there is no substitute for experience. Dealer confidence in the ability of ABC to deliver equipment that is easier to sell, easier to install and easier to service is based on the knowledge that ABC has done just that . . . for more than a quarter of a century. You can put that knowledge, experience and reputation to work for you! Simply write for complete dealership details now.



ABC Oil Burner ®

FAMOUS ABC PRESSURE BURNER

Known and recognized as one of the finest gun burners in America for domestic heating needs! Smooth, vibrationless operation, exclusive engineering features that assure unusually efficient operation.

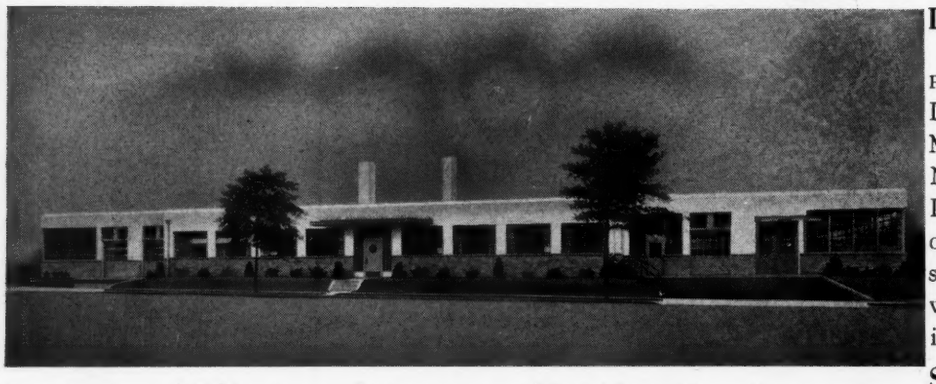
HANDSOME, ECONOMICAL STEEL BOILER UNIT

A complete unit—with built-in combustion chamber, tank or tankless heater, jacket, burner and controls—at a really attractive price. Designed for longer, more efficient service.

AUTOMATIC BURNER CORPORATION

1823 CARROLL AVENUE • CHICAGO 12, ILLINOIS

fuel oil & oil heat



Exterior view of Eckhart's new factory.

gineer. Silent Korth equipment made by the company includes conversion oilburners, oilfired furnace units and oil-boilers.

Mr. Eckhart personally supervised construction of the new plant with an eye to innovations that would permit production economies. The plant covers 20,000 sq. ft. of floor space, in addition to which there are 2,000 sq. ft. of space for offices, sales and engineering departments.

The building is designed so that trailer trucks can drive in directly off the main highway to the receiving department ramp. Materials so delivered are progressively worked through the plant so that they arrive at the shipping department on the other end all ready to be loaded and shipped.

Among the features of the plant are water-wash spray booths, bake ovens, an overhead conveyor system and an oilburner assembly line. The plant is equipped with 200 fluorescent lighting fixtures and has the very newest type of electric installations including a Buss-Duck system so that required power is available immediately in any part of the building.

Delavan Engineering Named Representative for Polo Pump

POLO PUMP CO., Polo, Ill., has named Delavan Sales Engineering Co., Des Moines, Ia., sales representative in Iowa, Nebraska, Minnesota, North and South Dakota. H. L. McNally of the Delavan organization has been placed in charge of sales of Polo pumps, and his campaigns will emphasize the improvements being incorporated in the pumps.

Silent Glow Offers Wholesale Purchase Plan to Dealers

A PLAN whereby dealers can purchase a stock of oilburners from the factory, is being offered to its dealers by Silent Glow Oil Burner Corp., Hartford, Conn., in conjunction with Commercial Credit Corp. Terms and rates provide for minimum deposit of 10%, plus flat charge, by the dealer and a maximum advance by Commercial Credit of 90%, less flat charge. Maximum original maturity is ninety days, with three extensions of thirty days each permissible, providing the principal is curtailed 10% each time

The BURNRITE Anti-Syphon Valve

GREATLY IMPROVES FUEL PUMP PERFORMANCE

- PREVENTS Back Syphonage
- PROMOTES Top Efficiency

A distinct asset to every oil burner installation, the BURNRITE Anti-Syphon VALVE is today's most effective means by which you can assure your customer of complete freedom from back-syphonage! It eliminates undue wear and strain on fuel pump and motor and will not chatter in operation. A rust-proof and a low-vacuum operating unit, the BURNRITE VALVE requires no attention. Because it assures trouble-free performance, every BURNRITE VALVE installation reduces service calls to a minimum.

Specify BURNRITE VALVES on every oil burner job . . . get in touch with your jobber or write direct.

APPROVED BY NATIONAL BOARD OF FIRE UNDERWRITERS — APPROVED BY NEW YORK BOARD OF STANDARDS AND APPEALS.

BURN RITE

BURNRITE VALVE MFG. CORP.

177 W. FIRST STREET DEPT. A MT. VERNON, NEW YORK

Public Confidence Assures Business Success!

WITHOUT the all-important factor called public confidence, no business organization can enjoy success for long. A good way to obtain this is to choose well-known, well-established products . . . and then give users the best possible service.

Chrysler Airtemp products (heating, air conditioning and commercial refrigeration) reflect the engineering skill and manufacturing excellence for which Chrysler Corporation is famous around the world!

And—an important operation at Chrysler Airtemp is a department devoted exclusively to assisting dealers in the training of their organizations in product installation and service. Such factory co-operation is a *big help* in clinching owner satisfaction.

The Chrysler Airtemp Triple Line is designed to give dealers profit opportunities every month of the year. Agreements are written for the entire Triple Line, or for one or two lines to fit requirements of specialty organizations. For full information, you are invited to fill out and mail the coupon today.

AIRTEMP DIVISION OF CHRYSLER CORPORATION, Dayton 1, Ohio
In Canada — Therm-O-Rite Products, Ltd., Toronto

Automatically Yours

CHRYSLER AIRTEMP
DIVISION OF CHRYSLER CORPORATION

BETTER HOME HEATING AND AIR CONDITIONING PRODUCTS

HEATING • AIR CONDITIONING • COMMERCIAL REFRIGERATION

fueloil & oil heat

For Details—Mail Today

Airtemp Division of Chrysler Corporation
Dayton 1, Ohio

Please provide me with information concerning Chrysler Airtemp dealer agreements. (FOH-8)

Name_____
Business_____
Address_____
City_____ State_____
I am interested (check) Heating_____
Cooling_____ Refrigeration_____

and an additional flat charge of ½% is paid.

Flat charge is normally figured at 1% of the amount advanced. The monthly charge amounts to 3% simple interest per annum, at the rate of ¼% per month based on average daily balance outstanding.

Finance charge, under the plan, includes fire, theft and transportation insurance, which covers interest for the full wholesale invoice price of burners financed under the plan.

Metal Working Paper Features Sundstrand Production Methods

MANUFACTURING METHODS, employed by Sundstrand Machine Tool Co., Rockford, Ill., in the manufacture of fuel units, was the subject of an article which appeared in a recent issue of *Production Engineering & Management,* publication devoted principally to the metal working field. The article was one in a series of production plant biographies, featuring streamlined production, prepared by the magazine, and cited modern tooling for volume precision production being used at Sundstrand. Numerous illustrations show machines in actual use.

The article commences with a brief description of Sundstrand's patented seal and continues with an explanation of how it works. Special tooling, jigs and fixtures and effective use of productive floor space, has enabled Sundstrand, the article relates, "to reach a product output of approximately 2500 complete units per day with an anticipated production for this year of 600,000 fuel units."

Special mention is made of the rigorous inspections and tests to which units are subjected, which include station checking after each operation, as well as finished parts inspections. After final assembly, each fuel unit is given a 2½ hr. run-in test, a 10 hr. hydrostatic test for leaks and complete performance tests.

Burnham Boiler Holds Annual Golf Tournament

SEVENTY-SIX attended the Sixteenth Annual Golf Tournament, sponsored by Burnham Boiler Corp., Irvington, N. Y., held June 17 at Briar Hills Country Club. Ties for first, second and eighth place and a triple deadlock for fifth prize resulted in sixteen participants sharing the eleven golf prizes.

F. R. Brophy, F. W. Kuss, J. R. Pearce and A. J. Hall comprised the committee who arranged the outing, which was deemed such a success that plans already are under way for next year's affair.

Atlantic Burner Supply Moves To Newer and Larger Quarters

ON JULY 1, Atlantic Burner Supply Co., Inc., moved to 100-10 Atlantic Ave., Ozone Park 16, N. Y. The building, even though it is directly across the street from their former location, Richmond Hills 18, N. Y., has a different post office designation.

Facilities for repairing and reconditioning of pumps, valves and controls are being installed in the larger and more modern building, and plans include publication about September 1 of a parts and repair catalog.

Sid Harvey Plans Ninth Store In New Brunswick, N. J.

THE NINTH STORE to carry a complete line of service parts, new and rebuilt pumps, valves, controls, motors and trans-

TWO PRODUCTS WITH ONE PURPOSE.. FUEL PROTECTION

SENTRY AT-A-GLANCE GAUGES

Accurate reading . . . from any direction!

Dependability is built right into Sentry gauges — and, you take no chances for they are fully approved and tested as standard by the Underwriters Laboratories. Perfect visibility for easy reading from all directions—double plastic calibration assembly dome—guaranteed leakproof and strong construction throughout and safe under filling pressure are just some of the important features. There are no cams, springs, magnets or gears to cause trouble or wear out . . . All mechanism being as simplified as possible to assure accurate measuring. No adjustments are necessary and installation can be handled by anyone, even when tank is partially full. Sentry At-A-Glance gauges are designed to fit all tank sizes and shapes according to individual specifications. They are on guard *24 hours a day!*

Write today for descriptive brochure and price list of both products.

SENTRY DRAFT CONTROL

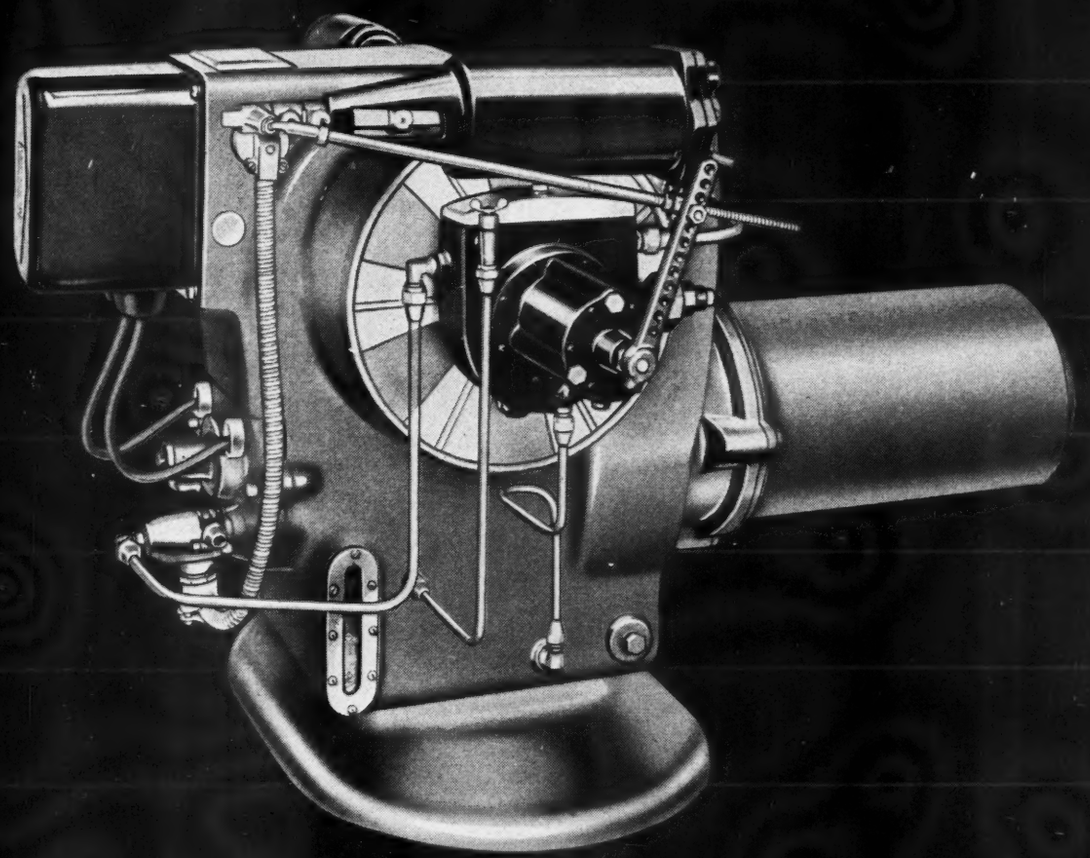
Reduces heating costs . . . increases furnace efficiency!

Quality construction with durable materials plus simplicity of functional design with fewer unnecessary working parts makes the Sentry Draft Control an economical regulator that will last for years. Cast aluminum mounting ring and baffle plate provides feather-light sensitivity to air currents and drafts. Aluminum pivots working in brass bearings assure free action and perfect operation at all times. Baffle balance is adjustable and allows for steady flow air passage of full capacity whenever required. Months of research and testing have enabled us to prove the Sentry Draft Control is equal or better in efficiency to other regulators on the market—and at lower original cost. Investigate this control today. Install it, then forget it . . . *It's automatic!*

KRUEGER *Sentry* PRODUCTS
GREEN BAY • WISCONSIN

Build a Reputation for reliable service . . . feature Sentry long wearing products

Cleaver-Brooks
HEV-E-OIL BURNER



FEATURES

- Burns low-cost zero-test No. 5 oil
- Burns catalytic oils
- Automatic Electric Ignition
- Flame Modulation
- Low Fire Start
- Automatic Pressure lubrication
- Nozzle oil shut-off valve
- High Combustion Efficiency
- Built by pioneers in oil-fired steam generators, who have the know-how of high-efficiency oil combustion.
- Available in sizes for immediate delivery for home, commercial and industrial use.

Profitable franchises to reliable established dealers.

HEV-E-OIL BURNER DIVISION • CLEAVER-BROOKS COMPANY

363 East Keefe Avenue, Milwaukee 12, Wisconsin

formers, will be opened in New Brunswick, N. J., during September by Sid Harvey, Inc., Valley Stream, N. Y.

This will be the company's third store in northern New Jersey and will operate as a branch of Sid Harvey of N. J., Inc., Newark, N. J. Matty Bernard, president of the Jersey company, states that daily deliveries will be furnished for dealers in the New Brunswick area.

Distributes Ko-Z-Aire Units

JONES & BROWN, INC., Pittsburgh 22, Pa., has been appointed national distributors for the line of KO-Z-AIRE weather conditioning units, manufactured by Ko-Z-Aire Mfg. Co., Red Oak, Iowa. Jones & Brown will handle all sales for continental United States.

Perfection Stove Prepares Consumer Advertising Campaign

ANNOUNCING what is described as its most ambitious advertising campaign since Pearl Harbor, Perfection Stove Co., Cleveland, Ohio, reveals that it will place advertising in thirty-two national publications, with a combined circulation of more than 24 million readers. Advertising, directed at consumers, will feature Ivanhoe model 2205 oilburning space heater and model 750 portable heater, as typical of the many models available.

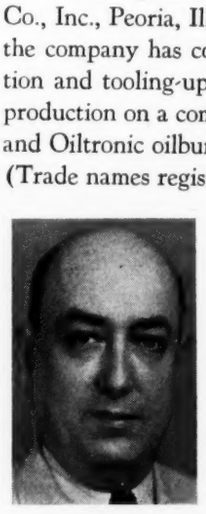
The campaign is aimed at attracting the attention and interest of the million prospects expected to purchase space heaters this year, says the announcement. Proofs of the advertisements will be posted on plant bulletin boards, for information of employees. Present schedules, running from August through November, have been prepared by McCann-Erickson Advertising Agency.

Atlantic Refining Earnings Rise For Six Months Period

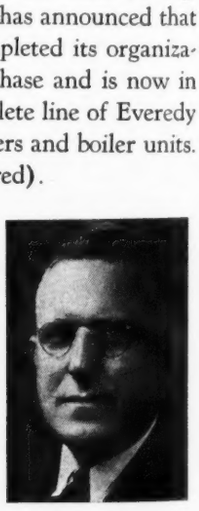
ATLANTIC REFINING CO., and subsidiaries, in a report for six months ended June 30, showed net profit of $6,295,000, equal to $2.07 a share on outstanding common stock. For the same period in 1946, net profit amounted to $5,146,000 or $1.75 a common share.

Mt. Hawley Mfg. Completes Its Organization and Plant

W. A. HALE, president, Mt. Hawley Mfg. Co., Inc., Peoria, Ill., has announced that the company has completed its organization and tooling-up phase and is now in production on a complete line of Everedy and Oiltronic oilburners and boiler units. (Trade names registered).



M. H. Braden



W. A. Hale

Incorporated October 1, 1946, Mt. Hawley Mfg. Co. has recently completed a modern factory and office building especially designed and equipped for the manufacture of oilburners and burner-boilers. The new structure is located on the field of the Hale-owned Mt. Hawley Airport, closely adjacent to Peoria. This modern location gives the company unsurpassed direct air service. Excellent direct rail and truck service also is available.

Mr. Hale first became interested in oil-

PROOF OF GREATER SALES

"Our Federal Sales Stay High!"

says prominent supply company executive.

Monroe Plumbing & Heating Supply Corp.

PLUMBING, HEATING AND OIL BURNER MATERIALS
1066 BEDFORD AVENUE
BROOKLYN 5, N. Y.

Federal Boiler Co., Inc.
Granite & West Sts.,
Midland Park, N.J.

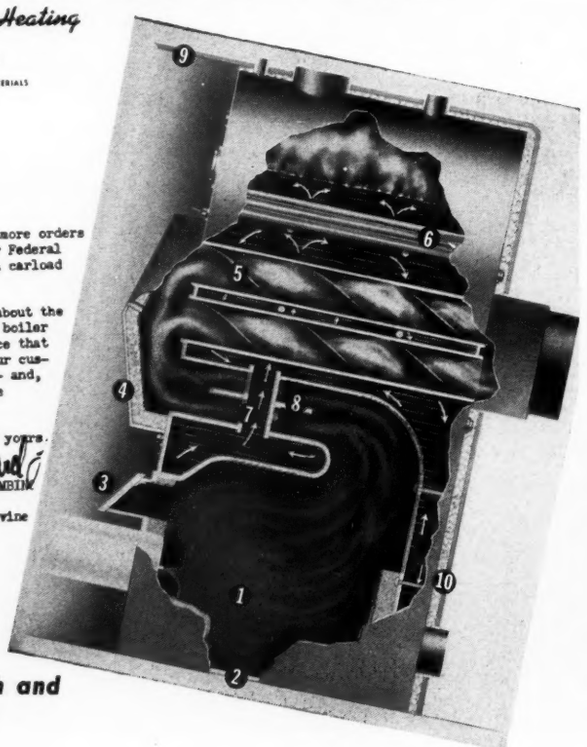
Gentlemen:

We keep getting more and more orders for your boiler - in fact, our Federal sales stay high - so send us a carload of mixed sizes.

We're very enthusiastic about the large volume of sales on your boiler because we know from experience that Federal Boilers always give our customers complete satisfaction - and, in that way, build up our name and good will.

Very truly yours,
MONROE PLUMBING
Bernard Levine

BL:wb



Guaranteed Shipment with Steel Jackets, Baked Enamel Finish and Instantaneous Coils

Yes . . . it's an endorsed, accepted fact that FEDERAL builds a compact, efficient boiler that gives definite customer satisfaction!

GET THE FACTS

FEDERAL BOILER CO., INC.
MIDLAND PARK, N. J.

FEDERAL BOILER CO., INC.
Granite & West Streets, Midland Park, N. J. FO 8

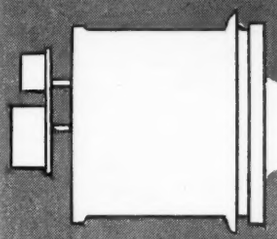
Gentlemen:
Please send me Price Sheets and Bulletin No. 121.

Name .....

Address .....

GET ALL THESE MODERN ENGINEERING ADVANTAGES WITH

BREESE



HORIZONTAL

OIL BURNERS

PROPER CAPACITY FOR MAXIMUM EFFICIENCY . . . Most of today's heating demands are within the capacity sizes (⅔ and 1 gph) of the Breese Horizontal Burner. By installing a burner of *proper* capacity for the job, overfiring and resulting waste of heat is avoided.

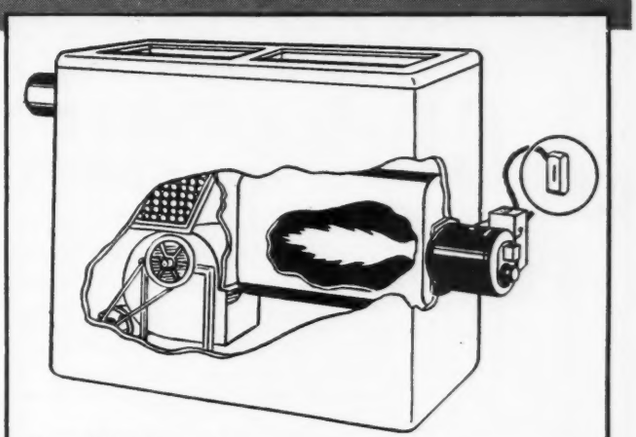
LOW COST—TROUBLE-FREE OPERATION . . . Simplicity in design results in low initial cost and the highly efficient firing rate insures low cost of operation. These operating economies are all obtained with trouble-free operation.

EASILY INSTALLED—FLEXIBLE IN APPLICATION . . . The burner is easily attached on the outside of the unit, in addition, refractory linings are not essential except where needed for insulation purposes. The burner is also adaptable to a wide variety of applications because of the ease of installation and ability to fire into many sizes and shapes of combustion chambers.

AUTOMATIC AND MANUAL CONTROL MODELS . . . The sketches illustrate the automatic model for heating plant use, also illustrated is the manual control model with Rheotrol for ranges, floor furnaces and many other applications.

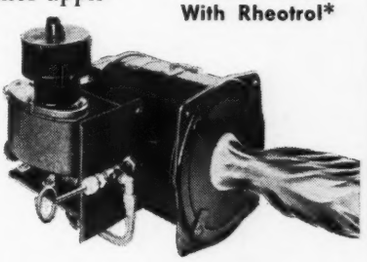
MANUFACTURERS—USE AS ORIGINAL EQUIPMENT . . . Here is the ideal burner for original equipment installation. Now you can offer the trade a unit of the *proper* capacity to meet today's heating needs.

DISTRIBUTORS AND DEALERS—USE FOR CONVERSION INSTALLATIONS . . . The Horizontal Burner is excellent for conversion purposes because of its flexibility and ease of installation. Sell more installations by selling the home owner on the lower oil consumption to be had when using a burner of *proper* capacity for maximum efficiency.



Forced-Air Furnace
Oil-Fired by Breese

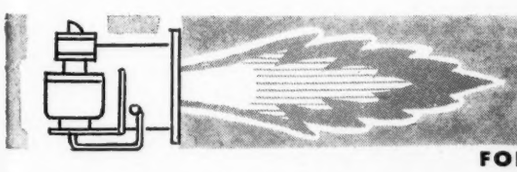
Manual Model
With Rheotrol*



Write today for descriptive literature and technical data. We will be pleased to cooperate on developments.

Heating Boiler
Oil-Fired by Breese

*Trade Mark



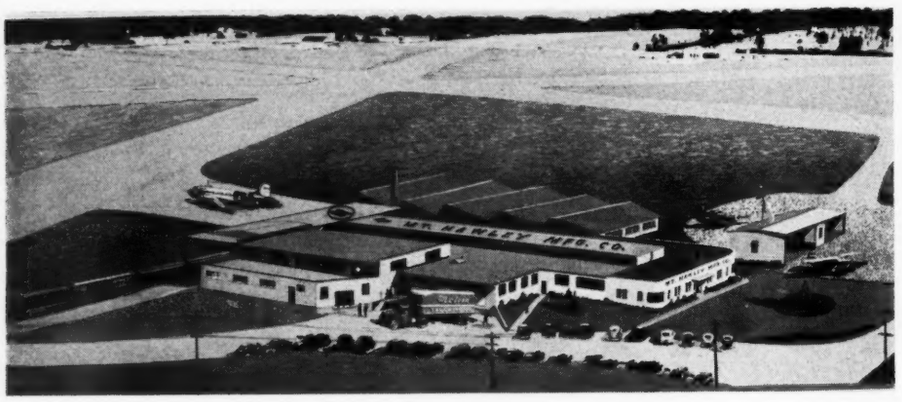
BREESE BURNERS inc.

FORMERLY OIL DEVICES

341 EAST OHIO STREET CHICAGO 11, ILL.

RESEARCH AND ENGINEERING
SANTA FE, NEW MEXICO

fueloil & oil heat



Mt. Hawley's airport and factory.

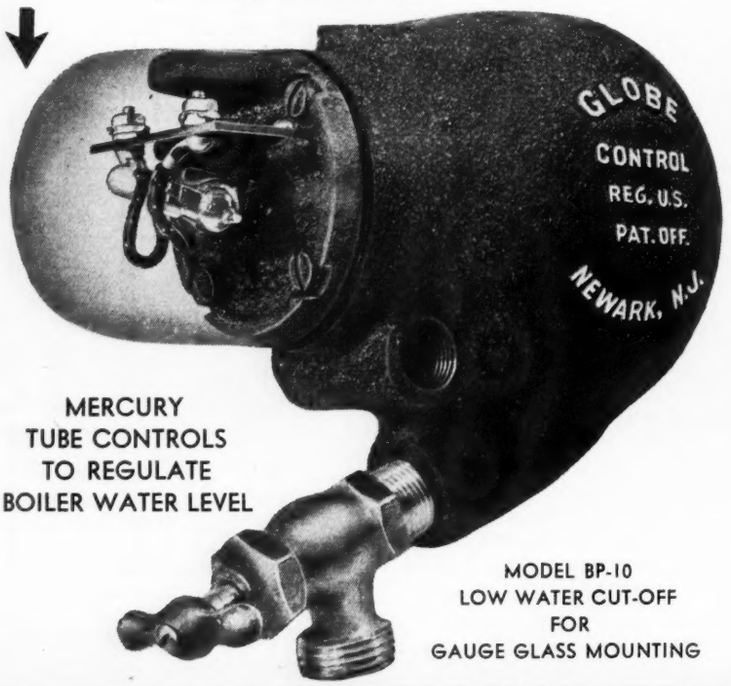
if- YOU MUST HAVE QUALITY at a LOW PRICE!

get Globe "DEPENDABLE CONTROLS"

No doubt about it—you've got to meet price competition again without lowering quality. That's why you want **GLOBE LOW WATER CUT-OFFS**—They're Dependable—Durable—Economical!

CHECK THESE FEATURES—

- ***Larger float chamber—reenforced float and bellows assembly.***
- ***Complete core casting—eliminating possibility of leaks.***
- ***Combination gauge glass fitting with tapping for pressure control.***



MERCURY TUBE CONTROLS TO REGULATE BOILER WATER LEVEL

MODEL BP-10
LOW WATER CUT-OFF
FOR
GAUGE GLASS MOUNTING

Exclusively Distributed by

WINSTON COMPANY

359 AVON AVE. • NEWARK 8, N. J. • Bigelow 3-8781

burners about 1922 when the firm for which he was chief engineer charged his department with design of equipment that became the Hart oilburner. In 1937 Mr. Hale, as a partner in the Aldrich Company, assumed responsibility for the record-breaking production that resulted in the outstanding success of the company. He continued in this capacity until last year when he organized the Mt. Hawley Mfg. Co.

Mr. Braden, vice-president in charge of sales, has a longer experience in the industry. He contributed to the development of the Williams Oil-O-Matic, and has been actively engaged with Nu-Way Corp., Braden Engineering, Oil Burner Builders, and Braden Everedy. In 1940 he became associated with Mr. Hale at Aldrich where they produced for the armed forces during the war.

The complete line of five burners (.75 to 20 gph.) and seven boiler units (350 to 3500 EDR) will be in volume production in about 30 days. Some models already are being shipped in volume.

Matheson Returns From Survey Of European Distributors

W. A. MATHESON, executive vice president, Williams Oil-O-Matic Div., Eureka-Williams Corp., Bloomington, Ill., returned

Mr. Matheson and Mr. Langdoc shown about to board plane for Brussels.

July 4, after a five weeks survey of European distributors. He left early in June, with Malcolm Langdoc, Eureka-Williams export division, aboard a Pan American World Airways Clipper Express of the Skies for Brussels.

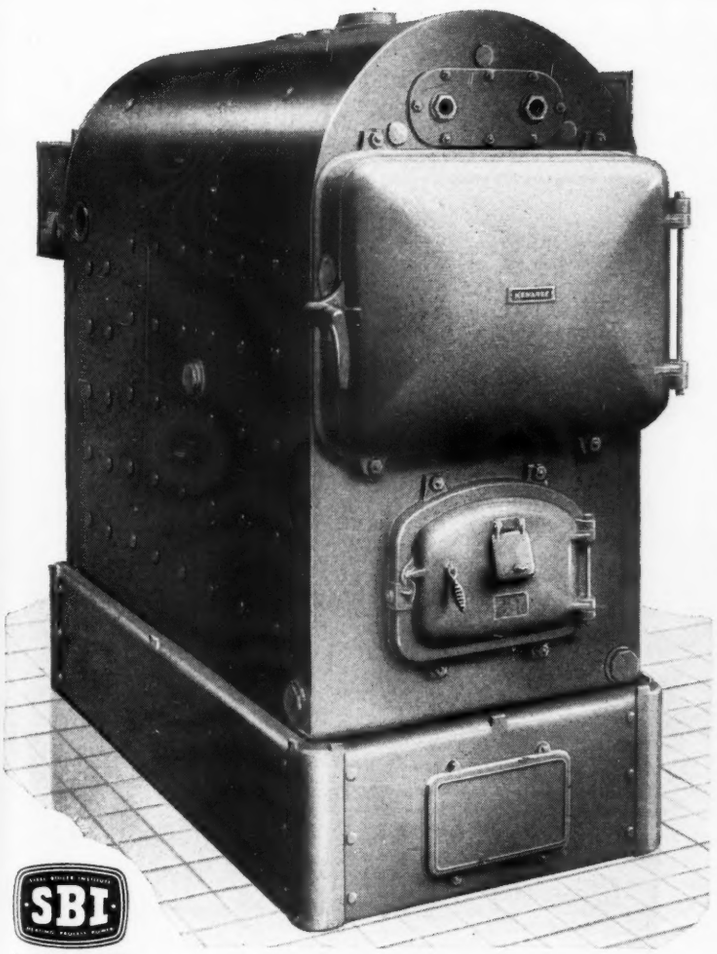
The trip included visits to the company distributors in the British Isles, Europe

Another ☆ in the Kewanee Line

{ for Heating Medium Size Buildings Dependably with High Efficiency }

KEWANEE

SQUARE-HEAT TYPE R BOILER



SBI
Reg. U. S. Pat. Off.
MEMBER

● **The Kewanee Square Heat Boiler is an improved "streamline" version of previous Type R models,** *redesigned and simplified in one super-fine series.* These eight new 3R units incorporate all the features which have made the 16 sizes of Kewanee Type R so popular during the last seventeen years.

● This Square Heat Series takes in the upper bracket ratings as developed in the Steel Boiler Institute Code for residential boilers . . . making it ideally suited for *heating medium size buildings with* unusually high efficiency.

● For Oil, Gas or Coal (stoker or hand fired) and *easily and quickly converted from one fuel to another.* You can switch from oil to gas and back again, and a change to coal requires no alterations in the boiler proper.

Eight Sizes for 740 to 3000 Square Feet Steam, S.B.I. Net Rating.

ARMY-NAVY
Won For 5th Time

KEWANEE BOILER CORPORATION
KEWANEE, ILLINOIS
Branches in 60 Cities—Eastern District Office: 40 West 40th Street, New York City 18
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

OVER 75 YEARS BOILERMAKERS

fuelfoil & oil heat

and the Scandinavian countries, designed to survey present and future conditions and to re-establish relationships broken off by the War.

Jersey Opening Attracts 5,000 Customers and Users

EVERYTHING'S "JAKE" in Trenton, N. J., judging from the turnout of 5,000 people at the grand opening of the new, modern plant of Mechanical Devices Co., Inc., the city's oldest and largest oil burner company, Williams Oil-O-Matic dealer and distributor of Cities Service petroleum products, operated by I. F. Jacobs and his wife, Marie.

The circus atmosphere in the cool, night air on Saturday, June 21, when the crowd turned out, was the result of a shrewd build-up. Full-page newspaper ads, radio broadcasts and spot announcements, entertainers, movies, prizes—even a big parade the day before—contributed to the ballyhoo that brougth out the bumper crowd despite many other Saturday night attractions and unpromising weather. Traffic was tied up for blocks around the plant, so much so that some people waited

Jake's employees proudly pose before their new plant.

until the following Monday to see the displays.

As a result, Mechanical Devices Co., Inc., now has a file of 4,256 home owners and 497 oilburner users who registered at the show, plus immeasurable publicity throughout the community—and farther. One advance ad alone turned up 85 prospects.

The new plant covers three acres, includes 2,200 square feet of floor space and twelve bulk storage tanks, the largest with a capacity of 250,000 gallons. Other equipment includes eleven fuel oil delivery trucks, two refinery-to-storage transport trucks, five installation trucks and six service cars.

Honor Warner Lewis Co., Viking Pump Outlet in Oklahoma

IN A RECENT ISSUE of the *Viking Vacuum*, house organ of Viking Pump Co., Cedar Falls, Iowa, tribute was paid to Warner Lewis, Tulsa, Okla., who has been Viking representative in Oklahoma for almost sixteen years.

Mr. Lewis started as a direct factory district manager, selling Vikings exclusively, and has built up an organization that today includes salesmen, service men, shop and maintenance employees. Warner Lewis Co. now stocks a complete line of oil handling equipment.

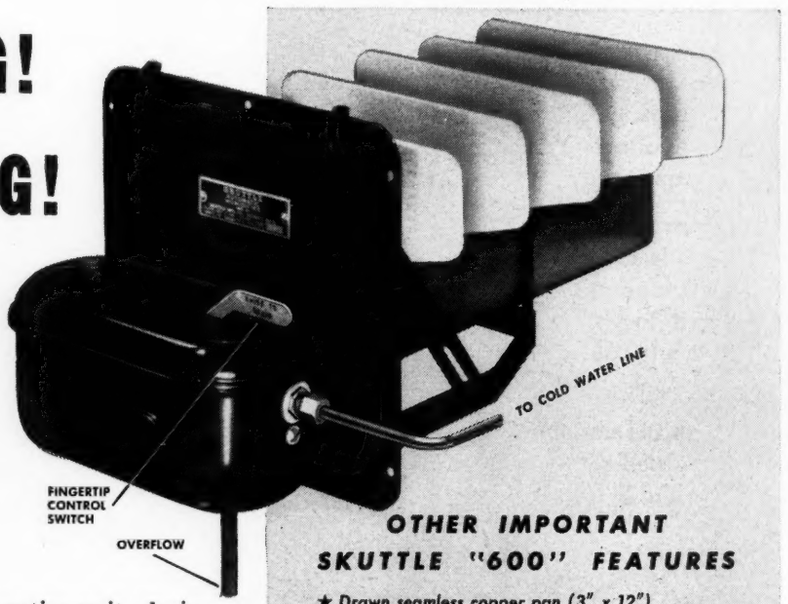
Even prior to his association with Viking, Mr. Lewis was familiar with the pumps as he worked for Marland Oil Co., Cities Service and Leader Iron Works, where he installed Viking pumps in service stations and bulk plants.

Petro Industrial Burner Staff Meets For Ten Days at Factory

THE INDUSTRIAL BURNER FIELD STAFF of Petroleum Heat & Power Co., Stamford,

Self FLUSHING!
Self CLEANING!

AUTOMATIC CLEANING NOW POSSIBLE IN THE NEW SKUTTLE HUMIDIFIERS



IT'S TRUE! Skuttle Automatic Humidifiers (Series 600*) are completely self-flushing, completely self-cleaning! All you do is raise the fingertip control switch to flushing position and Skuttle's new exclusive vacuum-controlled cleaning system does the rest . . . flushes the entire unit, drains off all water, sludge, mud and mineral deposits, then automatically trips off to allow unit to refill again to valve adjustment level! No hand scraping required, no clean-out panel necessary! Simple, convenient, foolproof!

New Self-Flushing Float Chambers are also available to rehabilitate existing Skuttle units . . . Series 300, 300A, 500, D.S.

*Patents Pending

OTHER IMPORTANT SKUTTLE "600" FEATURES

★ Drawn seamless copper pan (3" x 12").
★ Replaceable VAPOGLAS* evaporating plates.
★ 5 plates furnished. Evaporating area 316 sq. in.
★ Automatic anti-siphon float control valve.
★ Collar fits sloping or vertical bonnets.

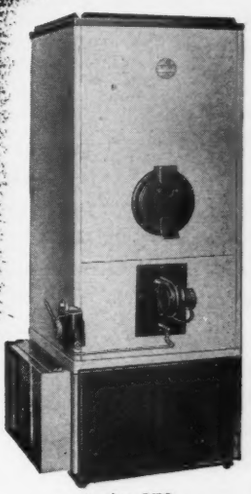
See your local jobber or write today for state listings and the complete Skuttle story!

Skuttle MANUFACTURING CO.
4099 BEAUFAIT, DETROIT 7, MICHIGAN

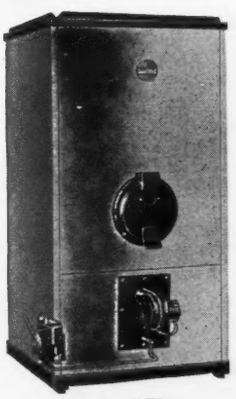
...put it IN take it OUT in a Jiffy

THE COMPLETE BURNER FROM *any* MONCRIEF

Vaporizing pot type oil fired unit

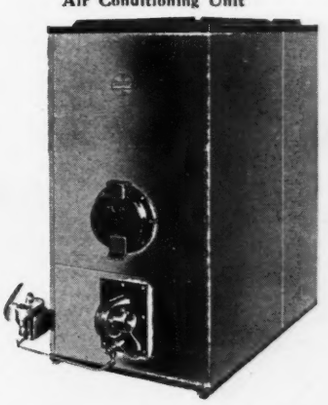


Series VU
Oil Fired, Steel Utility
Air Conditioning Unit



Series VW
Oil Fired, Steel
Gravity Unit

Series VL
Oil Fired, Steel
Air Conditioning Unit



You disconnect fuel line—remove a few sheet metal screws, remove a single panel, loosen two thumb screws—and lift out the burner—all in "a jiffy."

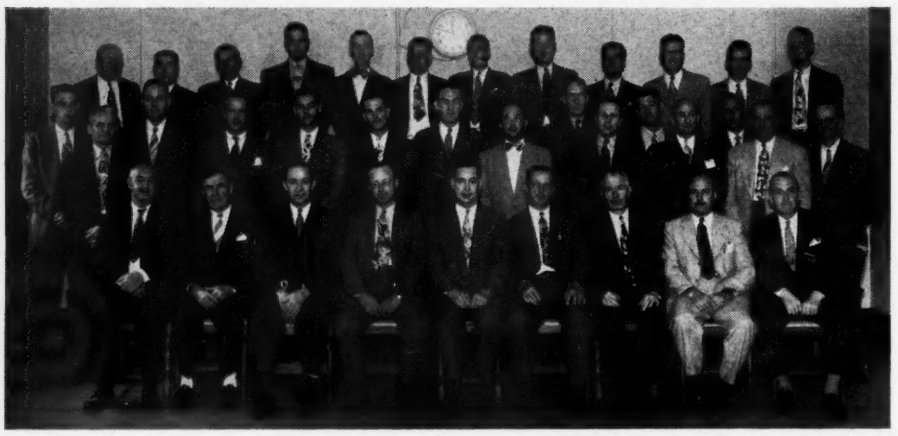
Check these outstanding features—features that make the Moncrief line "tops" in vaporizing, pot-type oil fired equipment . . . the burner with high and low flame baffles, assuring smokeless combustion—long-lived stainless steel flame deflector, saves oil, increases efficiency—heat absorbing radiation shield that does away with noisy inner liners—rugged, steel heating element and a cabinet that needs no basement platform or grouting.

LISTED BY UNDERWRITERS' LABORATORIES.

THE HENRY FURNACE COMPANY ○ *Medina, Ohio*

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

fueloil & oil heat



Petro's industrial field staff who attended factory course.

Conn., recently concluded a ten day technical seminar on industrial oilburning equipment, held at the factory. The program covered in broad outline the technical developments in heavy oil combustion and oil refining made during and since the war.

The rapidly increasing use of heavy residual fueloils, it was explained, has led Petro to recognize that industrial oil users need help to control oil consumption without restricting boiler output or plant productivity. All recently developed electronic and sequence controls were demonstrated and explained to the assembled staff during the refresher course, in their relation to the Petro thermal viscosity system.

Twenty-Three Thousand In U. S. Employed by American-Standard

A TWENTY PERCENT expansion in the number of persons on United States payrolls of American Radiator & Standard Sanitary Corp., Pittsburgh 22, Pa., has increased employees to 23,000.

In making the announcement, Theodore E. Mueller, president, points out that 96½% of the total production turned out by these employees in American-Standard's United States plant is being allocated to domestic consumption; 2½% to Latin America. In Europe, the company's plants in many foreign countries have been restored to active production.

York Repairs Fire Damage; Employs Huge Loading Crane

DAMAGE to its sheet metal fabricating plant, caused in a spectacular general alarm fire on June 27, has been repaired and full production resumed on July 10, according to York-Shipley, Inc., York, Pa. The building damaged is occupied by York, along with three other concerns, and all the sheet metal shop equipment was located in a section of the first floor, virtually untouched by the fire. York suffered major losses, however, in the parts storage section on the second floor, but the items are replaceable. Estimated damage of $100,000 to inventory, building improvements and machinery, was reported. Quick work on the part of York personnel

An oak tree is a symbol of deep rooted strength that has been tested by wind and storm and time. Other trees may spring up faster. Some grow taller. Many have more spectacular coloring . . . But few produce stauncher timbers.

What has an OAK TREE got to do with an OIL BURNER "ad"?

Much as an oak tree grows, the S. T. Johnson Co. has grown from a very small and unpretentious acorn planted in 1903 . . . just two years after President McKinley's assassination.

Forty-four years have passed since we built our first oil burner. We've been building them ever since . . . building nothing else . . . building with a single-minded determination to make oil burners safer, quieter, more efficient, more economical . . . Many of the great advances in oil burner design grew out of Johnson engineering skill.

Today, technical leadership of Johnson Oil Burners is known to heating engineers the world over. And the tiny S. T. Johnson Co. that started in a one-room workshop in the far west has become a landmark in the vast oil burner industry.

There's a Johnson Oil Burner for every heating need

Johnson Oil Burners

S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
401 No. Broad St., Philadelphia 8, Pa.

New National Magazine Campaign Spotlights Petroleum's Progress

Understand Rivalry and you understand America

RIVALRY is Dad forgetting his stiff back to grow the best tomatoes in town. Rivalry is Mom's determination to make a better cake than Mrs. Brown. From county fairs to quiz programs, from baseball games to business, rivalry is in America's blood... a thrill and a challenge. We've outdistanced the world because we like to outdistance each other.

Take the American Oil Industry, made up of more than 34,000 individual firms of all sizes. In this competitive business 1,250,000 people make their living in oil production, oil transportation, refining, research, marketing.

Here rivalry spurs progress—finds ways to provide Americans with finer petroleum products at the lowest prices in the world ... better gasoline, lubricants and fuel oil ... better things from petroleum in a hundred fields—chemistry, medicine, farming, manufacturing.

The result—better health, a chance to go more places more easily, more comfort ... more ... *constantly* more, for you.

THERE'S A PLUS FOR YOU IN PETROLEUM'S PROGRESS

By "directional drilling," oil wells can now turn corners underground. By advancements such as this, 13,478 oil production companies help build up America's oil reserves.

Today's tankers speed at a rate 50% faster than 20 years ago. 650 companies engage in oil transportation by tanker, barge, pipe-line or rail. Result—better service, lower costs.

Keen competition in refining techniques has developed finer fuel—for planes like Jet P-80 and your car. Some 400 refiners are responsible for over 1200 different oil products.

Over 20,000 distributors and jobbers compete to serve you. Example: fuel suppliers chart daily temperatures, forecast your needs according to weather, work to keep you supplied.

225,000 service stations compete for your favor. Each vies with his neighbors in serving you. Over half a million people are engaged in this familiar phase of the oil business.

Prepared for the Oil Industry by the American Petroleum Institute Copr., 1947

"Understand Rivalry and you understand America"...

That's the theme of the new national magazine campaign recently launched in *Life, Saturday Evening Post, Collier's* and *Look* to explain to the public why "there's a *plus* for you in petroleum's progress." With a dramatic series in pages in full color and black and white—the above ad is the first—the story of *your* business ... and *every* business ... is being told to an audience of more than 58,000,000.

Your Part in the Campaign

You know that everyone in every phase of the oil business has a big stake in this campaign. You know the support of *every* oil firm is needed *locally*.

New Plan Book Ready

To help you tie-in and support the program through your own company—a detailed Plan Book has been prepared.

It offers FREE mats of seven different newspaper campaigns, display material, radio scripts, envelope stuffers—a wealth of promotional material which can be used by your firm.

DON'T DELAY—ACT NOW

Send for your free Plan Book at once. Be one of the first firms in your section to take advantage of a "big time" tie-in with the big time national campaign. Mail this coupon today.

Public Relations Operating Committee, Dept. 6A
AMERICAN PETROLEUM INSTITUTE
670 Fifth Avenue, New York 19, N. Y.

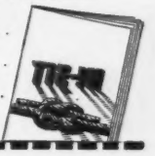
Please forward at once FREE copy of Plan Book.

Name .....

Company .....

Address .....

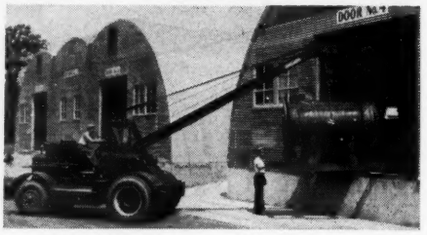
City ..... *State* .....



fueloil & oil heat

in greasing machinery and metal inventory items was credited with preventing any severe water damage as an aftermath to the fire or while a new roof was being installed over the sheet metal fabricating plant.

A roustabout crane, described as the largest of its type in use in central Pennsylvania, has just been placed in operation by York-Shipley, Inc., York, Pa. The machine is gasoline driven and has a lifting capacity of six tons. It is being used for heavy loading and unloading work at York-Shipley's new Quonset plants, where a complete line of oilfired heating equipment is being produced for the residential market.



Heavyweight crane lifts big boiler with ease.

If It's Well Known... the Public Wants It!

People *like* to know what they're getting; when they ask for a well-advertised product, they rarely question quality, or doubt service.

INSTEAD, they buy with confidence—both in the product and reseller. For they realize no reputable concern can afford to advertise any product nationally and back both the product and its resellers *unless that product is good!*

Result: More new customers think of *the well-known product first*, when buying. Quality Mobilheat is this kind of confidence-building product. The public has heard about it—read about it—knows about it—WANTS IT. In fact it's already one of America's largest-selling fuel oil brands.

Mobilheat

Mobilheat
SOCONY-VACUUM HEATING OIL

SOCONY-VACUUM OIL COMPANY, INC.

Live Heat Explains Timken Unit to New Home Owners

LIVE HEAT, INC., Hempstead, N. Y., Timken dealers who are supplying oilfired units for installation in homes being built by Levitt & Sons on Long Island, distributes to each new home owner, a small folder, presenting "some thoughts on proper maintenance and simplified operation for obtaining maximum results."

The center of the folder features illustrations, in color, of the Timken boiler and wall-flame oilburner, which are being used on the jobs. Accompanying are descriptions of the unit and of the outside 275 gallon Ventalarm equipped, fueloil storage tank. Live Heat, Inc., assumes responsibility for guarantee and free service of the unit for one year from date of occupancy and fueloil will be furnished by its affiliate, Live Heat Fuel Oil Corp. Metered deliveries are scheduled under the Degree Day system.

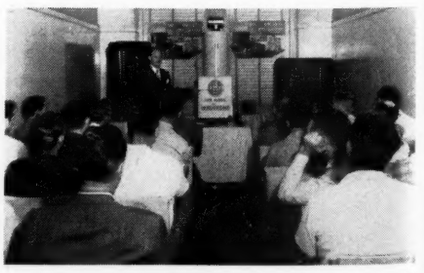
L. I. Airtemp Dealers Meet at Brightwaters

A JUNE MEETING, sponsored by Barringer and Barrett, Airtemp 4-Star dealers in the Bayport, L. I., N. Y. area, was held at the Riviera Club, Brightwaters. J. A. Clarke, Airtemp district representative in New York, outlined to associated dealers the need for a specialty merchandising organization in each individual dealership and discussed the procedure for setting up such an organization.

William Barrett, who had completed engineering schooling at the Dayton, Ohio factory of Airtemp Div., Chrysler Corp., explained features of equipment on display.

Evans Sales Meeting Held In Jacksonville, Florida

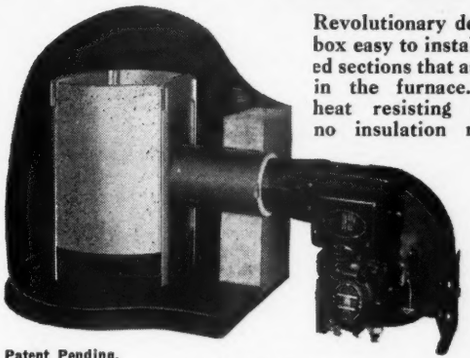
SALES PERSONNEL from the Savannah, Ga., and Jacksonville, Fla., branches of Westinghouse Electric Supply met at



Sales personnel hear Vic Clement present Evans oilburning line.

STAR STAINLESS STEEL FIREBOX

Can be built in just 3 minutes!



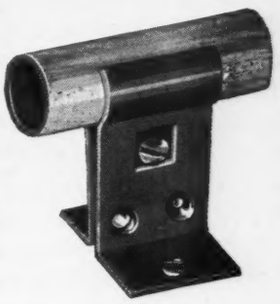
Patent Pending.

Revolutionary design makes the Star Firebox easy to install, for it is made in rounded sections that assemble quickly and easily in the furnace. It is made of high-heat resisting stainless steel—requires no insulation material for installation and eliminates firebrick breakage. It is especially useful in cast iron furnaces where it eliminates cutting of grate lugs and adds up to 25% to the heating area of the furnace. Severe tests in actual use have proven its ultra long life!

STAR STAND-OFF BRACKET

Neat — Quick — Easy to install!

The Star Stand-off Bracket holds 14-2 or 14-3 BX cable or half inch thin wall conduit to furnace or boiler casings. It provides air space between conduit and heated surface as required by electrical codes. Price, $5.50 per hundred, f.o.b. Seattle, Washington.

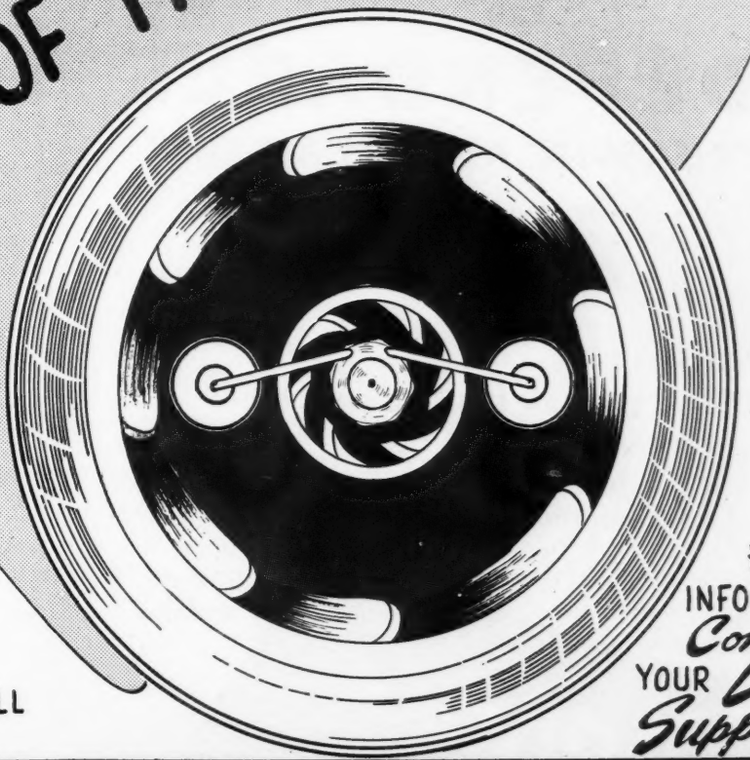


Free sample on request.

Manufactured by—

1723 1st Ave. So. MECHANICAL PRODUCTS COMPANY Seattle 4, Wash.

THE *Heart* OF THE OIL BURNER



SILENT-FLAME
presents
THE PATENTED
Micro-Tel
COMBUSTION HEAD
STANDARD EQUIPMENT ON ALL OUR BURNERS

FOR INFORMATION *Contact* YOUR *Local Supplier*

SILENT-FLAME MFG. CO., Inc.
807-15 ZEREGA AVE. NEW YORK 61, N. Y.

Jacksonville recently. They heard Vic Clement, Southern District Manager, Heating & Appliance Div., Evans Products Co., Plymouth, Mich., present the Evans line of oilburning space heaters and water heaters.

Present at the meeting was Leo Hernden, Florida Power and Light Co., an oilheating specialist who is devoting all his time to the promotion of such equipment.

C. W. Spengler, Jacksonville manager; D. E. Brunskill, Savannah manager; A. A. Mead, service supervisor, Florida area and key Jacksonville dealers attended.

Allied Host at York-Heat Selling Clinic in Boston

ALLIED APPLIANCE CO., Boston, Mass. and York-Shipley, Inc., York, Pa., were co-sponsors of a York-Heat retail selling clinic held June 13 at the Hotel Sheraton, Boston. The full-day session was under the supervision of Mitchel Landau, Allied's Heating Division Manager.

As principal speaker, the clinic heard Lester O. Stearns, manager of York's Residential Division, who presented a complete sales plan for expanded retail business. He was followed by Arthur V. Padou, district manager for York, who described performance features of each displayed model of conversion oilburners, boiler and furnace-burner units.

L. O. Stearns, York-Shipley, addresses dealers at retail selling clinic.

After a luncheon recess, Jack Adams of W. H. Long Co., York-Shipley advertising agency, urged the dealers to take advantage of the advertising and promotional program that has been prepared for them. Harry G. Connell, National Shawmut Bank, Boston, explained details of the time-payment plan.

Cite Oil Companies' Reports In Annual Financial Survey

THE 1946 ANNUAL financial reports of twenty-two oil companies have been cited for excellence in the Seventh Annual Report Survey conducted by *Financial World*, national weekly magazine. An independent board of judges will announce in mid-September one of these companies as having produced the best annual financial report of the petroleum industry. The company will be awarded a trophy at an awards banquet to be held October 10 in New York City. Standard Oil Co. (N. J.) won the 1945 competition.

◈

Julius A. Kayser has become assistant to President Donald N. Watkins, Laclede-Christy Clay Products Co., St. Louis, Mo. Mr. Kayser, who has been with the company for the past twenty-four years, has served in research, operating and sales capacities.

Victor Lazo was elected vice-president, Elliott-Lewis Co., Inc., prominent Philadelphia oilheating distributor, on July 23. Mr. Lazo, who formerly managed sales of York-Shipley's oilheating line, is widely known in the industry in the tri-state area surrounding Philadelphia.

DEPENDABLE
YEAR-IN AND YEAR-OUT
Dongan Transformers have long been used on leading makes of oil burners. For long life and dependable service, you can't beat a Dongan! Listed as standard by Underwriters' Laboratories.
Write for Bulletin.
DONGAN ELECTRIC MFG. CO.
2981 Franklin
Detroit 7, Mich.
The Dongan Line
Since Nineteen-Nine
WRITE FOR LITERATURE
DONGAN
TRANSFORMERS

The attention to detail that marks....

CRAFTSMEN

You'll find none of the sloppy workmanship that characterizes so many products today . . . none of the "that's good enough" attitude . . . here at Brundage. Brundage Blowers and Package Units are made to the same high standards by the same high class craftsmen that have always made Brundage products the fine products of the field. When you want the quality that means longer life and lower operating costs, specify Brundage Blowers and Package Units.

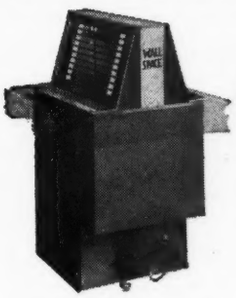
STRADIVARIUS

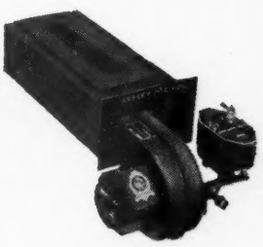
THE Brundage COMPANY

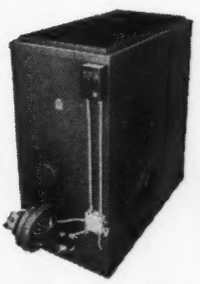
Blower Specialists Since 1919

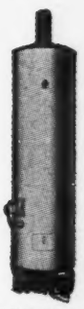
KALAMAZOO 11, MICHIGAN

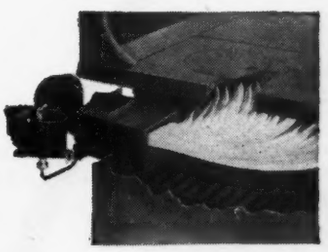
. . . Various Types . . . Many Uses mean YEAR-ROUND PROFITS *for Kresky Dealers*


FLOOR FURNACES


OIL BURNERS


FORCED AIR FURNACES


WATER HEATERS


RANGE BURNERS

Listed by Underwriters' Laboratories, Inc.

Dealers like Kresky simplicity . . . near trouble-proof performance. Naturally, too, they enjoy today's unprecedented demand for Kresky oil burner equipment for small homes. ★ It's the year round demand covering many different uses, however, that makes the versatile Kresky line so profitable to handle. With new plant and enlarged production facilities, Kresky is in a strategic position to meet increasing demand. ★ Qualified dealers are invited to write for franchise proposition.

KRESKY MFG. CO., INC.

Pioneers in Oil Burning Equipment Since 1910

PETALUMA · CALIFORNIA

Kresky *Oil* BURNERS

fuel oil & oil heat

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Groups' activities to reach the editor by the 20th.

OHI Revises Standards For Burner and Tank Installation

A. E. WHITEHILL, National Secretary, Distribution Division, Oil-Heat Institute of America, New York 16, N. Y., has announced a revised edition of "Oil Burner and Oil Storage Tank Installation Standards," available at 10¢ per copy. Orders for supplies of the Standards can be placed with national or local headquarters.

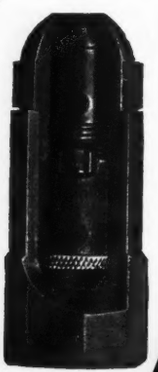
The announcement emphasizes that the Standards are not intended to be hardship rules, but have been formulated to prescribe reasonable provisions for installations. Further they are "based on minimum requirements to obtain good efficiency and to better protect life and property from fire or any other hurt connected with the installation and operation of the equipment."

Extensive revisions have been made in recommendations for installation of outside above-ground tanks, while twenty-nine other sections have been revised and improved.

TAKE A MONARCH "TIP"-- AND COMPARE RESULTS!

Most any nozzle will produce some kind of a fire, but —until you have tried Monarch Stainless Steel Nozzles (of a type with spray characteristics matched to your air mixing equipment) you won't know how good they really should be. State make of burner and sketch or accurately describe air mixing head and make test *yourself* with the series Monarch Nozzles we recommend.

Pulsation: We can usually suggest a remedy. Give full details of burner and the job.



Air Cones & Stabilizers

Monarch combinations have been used as original equipment by burner manufacturers for many years and dealers have used thousands of them to make old burners more efficient. Eliminate guesswork—Use this tried and tested equipment and be sure of *results*.
Now available for 3½", 3⅞", 4", 4¼", 4½", 4¾", 6" and 8" I.D. air tubes.

Replacement Valves

Monarch piston type pressure regulating and cut-off valves are available in several models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode.

Write for Catalog D

MONARCH MFG. WORKS, INC.
EAST WESTMORELAND AND SALMON STS.
PHILADELPHIA 34 PENNA.

I-B-R and U. of I. Sponsor Short Course in Heating

STEAM AND HOT WATER heating problems will be covered at a 3-day short course, sponsored by the Institute of Boiler and Radiator Manufacturers and the University of Illinois at the University's Navy Pier branch, Chicago, September 9, 10, and 11. Limited reservations will be made in the order in which they are received by H. C. Roundtree, assistant director, Division University Extension, Room 118A, Illini Hall, Champagn, Ill. Reservations should be made in advance.

The program will be conducted on the shop plan and will include lectures, discussions, and actual design problems to acquaint the student with the problems of steam and hot water installation.

Such topics as heat loss through building construction, resistance to flow in pipes and fittings, factors affecting comfort, the selection and placement of radiators and convectors, heating domestic hot water, and the selection of pumps and controls will be taken up during the course.

Much of the subject matter presented will be drawn from results obtained from research tests conducted in the I-B-R Research Home on the University of Illinois campus in Urbana, Illinois.

A $15.00 tuition fee will be charged by the University to include the cost of textbooks and classroom supplies. Individual living expenses will be paid by the student.

The opening lecture of the session will be "Heat Loss Calculation," by Professor E. A. Allcott, Head of the Department of Mechanical Engineering, University of Toronto. The afternoon will be spent in making calculations on the heat loss of a room based on the American Society of Heating and Ventilating Engineer's methods and the I-B-R method. These calculations will be done as a class, led by the instructor. Then each student will make calculations under the I-B-R method for all rooms in the I-B-R Research Home.

Following the calculations the group will gather as a forum for a general dis-

announcing

new Ohio Electric catalog on fractional H. P. Motors

* Just out! — A well-illustrated catalog which gives information on the high performance factors, all-purpose ratings and fine construction features of Ohio Motors . . . Oil Burner, General Purpose, Shell Type and Torque Motors.

* New catalog describes distinctive qualities of Ohio Fractional H. P. Motors . . . vibration-free operating efficiency . . . and lists a wide variety of industrial applications.

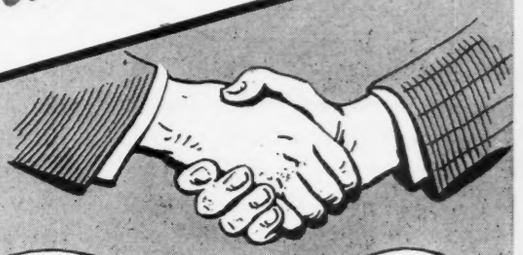
** Lower your operating costs with Ohio "Application Proved" Motors . . . Send for this catalog today!*

THE OHIO ELECTRIC MFG. CO.

Chester Bland, Pres.

5913 Maurice Ave. • Cleveland 4, Ohio

Invitation to Better Class Dealers



NATURALLY, a reliable dealer wants to do business with a reliable manufacturer, and vice versa. Catskill Metal Works, Inc., backed by over 100 years of quality manufacturing, offers an unsurpassed line of heating and hot water making equipment. Catskill makes available to you generous dealer helps to assist you in getting full profit possibilities with a complete outstanding quality line of automatic heating equipment.

OIL	STOKERS
Boiler-Burner Units	Boiler-Stoker Units
Conversion Burners	Bin Feed Stokers
Hot Water Makers	Ash Removal Stokers
	Hot Water Makers

Backed By Over 100 Years of Quality Manufacturing

CATSKILL AUTOMATIC HEATING

CATSKILL METAL WORKS, INC., CATSKILL, N. Y.

CATSKILL METAL WORKS, INC., CATSKILL, N.Y.

cussion of heat loss calculations and installation of one-pipe forced circulation hot water systems. Instructors will form a panel to answer questions. Professor M. K. Fahnestock, Assistant Director of the Engineering Experiment Station, University of Illinois will act as moderator.

The second day, E. C. Petrie, Assistant Directing Engineer of the Valve and Fitting Engineering Department, Crane Co., will lecture on "Flow of Fluids." After the lecture the students will calculate and design a two-pipe reverse return gravity hot water heating system, based on the I-B-R Installation Guide, No. 4, for a two-story residence.

In the afternoon H. F. Randolph, International Heater Company, will talk on "Factors Affecting Comfort," and Professor W. S. Harris, special research professor of the University of Illinois, will lecture on "Types of Radiation, Location, and Performance of Radiant Baseboards in the I-B-R Research Home."

At the dinner meeting in the evening R. E. Ferry, general manager of The Institute of Boiler and Radiator Manufacturers will give a talk entitled "A Trade Association at Work." He will be followed by an address on "Customer Relations in the Heating Business," by James Isham, Chicago.

On the final day, Professor R. J. Martin, University of Illinois, will lecture on domestic hot water, after which the class will calculate and design a steam system based on the I-B-R Installation Guide, No. 2. The I-B-R Research Home will again be used as a plan.

The sessions will be closed on Thursday afternoon with a lecture on "Pumps and Controls," by Samuel R. Lewis. Summarization of accomplishments will be taken up in a form of a question and answer period conducted by Professor Lorin G. Miller, Head of Mechanical Engineering Department, Michigan State College, and assisted by Professor R. J. Martin and H. F. Randolph.

NYOHA Outing Plays Host To Many Members and Guests

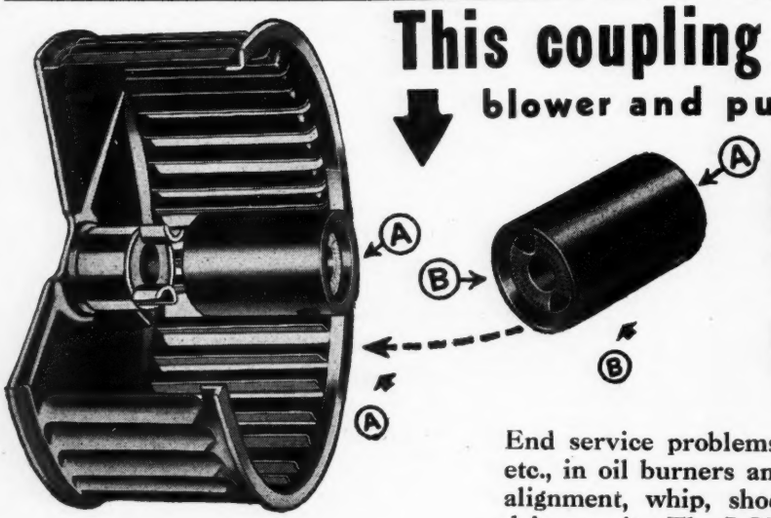
ALMOST three hundred members and guests of the New York Oil Heating Association, Long Island City, N. Y., attended the group's annual outing held July 17 at the Engineer's Club, Roslyn. N. Y. Outlook for the day improved considerably when the rain and cloudy weather cleared late in the morning and sun and blue sky marked the rest of the day.

In the official seven-inning softball game between teams composed of dealer and manufacturer representatives, the dealers scored in every inning but the last to pound out a 16 to 4 victory. Two home runs by the dealers and one by the manufacturers enlivened the proceedings. Low gross golf winner for members was J. Kaufman, Suburban Oil Co.; for guests, Ray Reeves, Royal Petroleum Co. A tug-of-war, nail driving and putting contests and other games rounded out the day's activities. Dan Bierman, Liquidepth Indicators, and outing chairman, awarded prizes at the dinner which concluded the program.

API Committee To Decide On Marketing Studies

ONE OF THE SIGNIFICANT decisions of the Minneapolis July 1 meeting of API's Marketing Committee was to appoint a committee to determine whether or not the Institute should undertake studies of

This coupling can't fall off when
blower and pump units are serviced



A.—L-R Body inserted in rubber body.
B.—L-R Socket molded in rubber engages blower hub.

LOVEJOY L-R
Type CX Double-flex
Flexible Couplings

End service problems due to wear on pumps, small motors, etc., in oil burners and air conditioning units because of misalignment, whip, shock, surge, backlash between drive and driven units. The LOVEJOY L-R Type CX Double-flex flexible coupling efficiently corrects for these enemies of machinery, and is so constructed that it can't fall off when units are serviced.

EASILY INSTALLED IN DARK OR CLOSE QUARTERS

Rapid assembly, ease in installing, low cost, all make the Type CX Double-flex the *first* coupling to consider for efficient, economical use in your heating and air conditioning products. Manufacturers will supply blowers having L-R jaws on the blower hub.

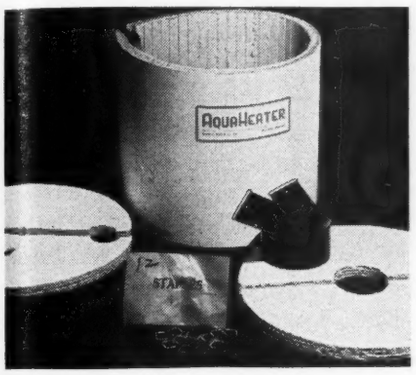
Write for Bulletin 520 on the Lovejoy L-R Type CX Double-flex coupling.

LOVEJOY L-R Couplings from 1/6 to 2500 H.P.

OHI

LOVEJOY FLEXIBLE COUPLING CO.
5012 W. Lake Street • Chicago 44, Ill.

Insulation *for each* Installation



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AQUAHEATER

TOPS IN EFFICIENCY
TOPS IN LOOKS

AQUAHEATER . . . the only tankless hot water heater with pre-formed insulation *at no extra cost*! Substantial fuel dollar savings for your customer through reduced stand-by losses. Attractive installations . . . easy and quick, make AQUAHEATER ideal for club basements and other places where neatness and compactness are desirable.

BETTER DESIGN

AQUAHEATER's beauty is more than skin deep. The unique Turbuflow (turbulence plus counterflow) copper coil soaks up maximum BTUs from boiler, assuring a steady supply of domestic hot water.

FULLY WELDED SHELL

No gaskets to leak. Entirely factory assembled and pressure tested. Will give lifetime service. Easier to handle than back-breaking castings.

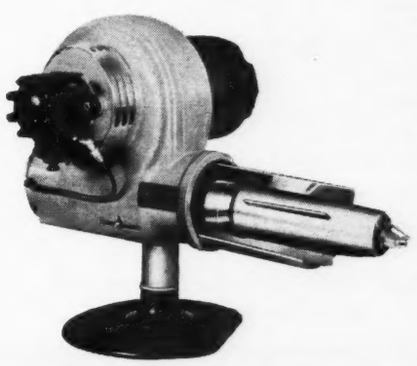
AQUAHEATER's abundant supply of hot water at all times, its ease of installation, its attractive appearance, its simplicity and reliability . . . are winning and holding new friends everywhere! Be sure to make your next installation AQUAHEATER!

For further details see your Favorite Plumbing Supply House

JOSEPH E. LEWIS & CO. INC.
Dept. B1
1303 Carroll St., Baltimore 30, Md.

Stop!

This really means something to you and your business right now—for the Richfield Flame Control Turbulator Head (patented in U. S. A. and Canada) delivers from 10 to 14% + CO_2 by actual field and laboratory tests, and stamps as "out of date, yes obsolete" the burners you are now selling——unless——unless you too can guarantee this unusually high efficiency performance.



EXCLUSIVE FRANCHISES ARE AVAILABLE

We want to hear from dealers small or large in all territories. We will demonstrate to you not only the most efficient "Burner" on the market today but show you how you can turn this outstanding development to your own financial advantage.

If you will write George Bernhard, President, your inquiry will have my personal attention.

George Bernhard, *Pres.*

RICHFIELD MANUFACTURING CORPORATION
21 West 19th Street, New York 11, N. Y.
Telephone CHelsea 3-1420

operating costs in the retail distribution of petroleum products. Clyde Morrill, Director of the Atlantic Coast Oil Conference had made a proposal to B. L. Majewski, Chairman of the Marketing Division, that such studies be undertaken by the Institute. Morrill pointed out that there was considerable question as to what constituted adequate margins and that such questions could not be satisfactorily solved until someone undertook the work of learning average operating costs under a variety of conditions.

The committee to investigate the feasibility of such an undertaking has not yet been named but it is expected to start work in time to report its findings at the annual meeting in Chicago in November.

At the suggestion of P. E. Lakin, Shell's Vice President and Chairman of the Division's Program Committee, a committee is also to be appointed to proceed with public education on fuel conservation.

Oil-Heat Institute got added recognition on the Marketing Committee of API when two of the fifteen additional members being added to the Committee were found to be OHI men. These are R. S. Bohn, President of OHI and President of Preferred Utilities, New York, and A. T. Atwill, President of Quaker Manufacturing Company, Chicago, who was named as a specialist on vaporizing burner problems. The other thirteen new appointments to the Committee were: Warren Butler, Tulsa; Harvey D. Carter, New York; B. E. Devere, Los Angeles; Harry J. Kiritz, President of Empire State Petroleum Assoc., Buffalo; J. A. Lentz, Denver; G. A. Olsen, Fresno, California; Rankin Peck, Detroit; Walter A. Crawford, Seattle; Louis M. Faber, Milwaukee; Harry K. Franklin, St. Paul; and John Dressler, Hackensack, N. J.

In announcing subjects for the Marketing Division's part in the annual meeting in Chicago in November, Lakin said the principal subject would deal with the distillate problem at the consumer level and would be titled, "Houses can be warm this winter."

The other principal subject is to be, "Trends in marketing—the evolution of tomorrow's market."

full steam ahead with "NO-SLUDGE"

When too much fuel oil is consumed in relation to the power output—look for sludge at the bottom of the tank.

SLUDGE not only cuts down the B.T.U. output, but generally retards over-all boiler efficiency.

"NO-SLUDGE" Fuel Oil Treatment activates B.T.U.'s by putting sludge deposits into suspension, improves combustion, keeps burner nozzles clean, and eliminates rust and corrosion.

To get the maximum amount of B.T.U.'s per gallon of oil use "NO-SLUDGE."

"NO-SLUDGE" is fully Guaranteed. Write for full details.

Dominion CHEMICAL CO., Inc.
WATER CONSULTANTS AND CHEMISTS FOR INDUSTRIAL AMERICA
11 WEST 42nd ST. · NEW YORK 18, N. Y.
Canadian Distributor: THOMAS ROBERTSON & CO., LTD.

Heating, Piping Association Plans Pittsburgh Meeting

THE FIFTY-NINTH Annual Convention of Heating, Piping and Air Conditioning Contractors National Association will be held June 1 to 5, 1948 in Pittsburgh, Pa. The Hotel William Penn has been chosen as headquarters.

New England Oil Men Hold Clambake at Manchester

THE ANNUAL CLAMBAKE, sponsored by Independent Oil Men's Association of New England, was held July 17 at the Manchester Country Club, Manchester, N. H. Afternoon activities consisted of golf and softball, followed by a report on the fueloil supply situation by Daniel Shanahan, who acquainted the assembly with development as revealed at the July National Petroleum Council meeting.

Wisconsin Group Explains Oil Outlook In An Open Letter

AN OPEN LETTER, prepared and distributed by the Wisconsin Oil Heat Association, Milwaukee, Wis., addressed to those "who use or contemplate using oil to heat their homes." The letter advances a sim-

Hold it— MR. DEALER!

WAYNE HOME EQUIPMENT

Here's the *NEW* Wayne Thermo-White Oil Furnace!

In every business there's a leader. Wayne proudly presents Thermo-White, most desirable of fully automatic oil fired winter air conditioners. Economy of operation and expert design are typical of all Wayne Products. Wayne backs quality with active merchandising helps. Write for details of the Thermo-White dealer merchandising advertising.

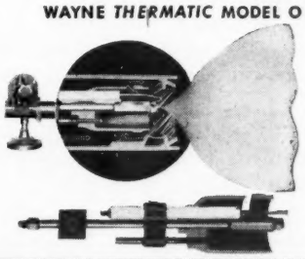
Thermo-White

. . . the sales sensation of the Oil Heating Industry is Here!

GLEAMING WHITE ENAMEL • FOREST GREEN TRIM

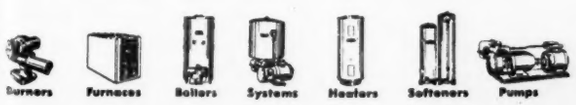
Matches Wayne water softeners, heaters and other equipment in recreation and utility rooms. No wonder Wayne dealers sold carloads in advance of public announcement! Imagine the demand when available newspaper dealer ads tie in with Wayne's national advertising! Thermo-White is Wayne's latest addition to a full line of oil and gas heating systems and conversion burners, and automatic home water systems. Write for details of the Thermo-White Furnace today!

THERMO-WHITE IS EQUIPPED WITH WAYNE *THERMATIC* MODEL O OIL BURNER



ECONOMY PLUS

More complete combustion with higher CO_2 rating for record economy. Firing head is rifled like a gun barrel. Adjustments are easily made from rear of burner. Burns standard fuel oils.



Write for Details of the Wayne Partnership Plan

THE WAYNE HOME EQUIPMENT CO., INC.
FORT WAYNE, INDIANA

Lochinvar *Oil Burning* WATER HEATERS

Great Team DESIGNED TO WORK TOGETHER

THERMOSTAT

The bimetal element (positive action) GOES UP when cold water enters the tank and GOES DOWN when the water is heated, OPENING OR CLOSING THE VALVE gradually through the operating rod.

SLOW OPENING OIL CONTROL VALVE

Responds to the thermostat to increase or decrease the oil flow. It makes this transition (either up or down) gradually so that there is never an overdose of oil.

MULTI-STAGE BURNER

Operates from pilot through intermediate fire to high fire and back again to pilot. The flow of oil is changed gradually, insuring a clean fire during these changes.

LOCHINVAR PRODUCTS

A Division of
MICHIGAN TANK & FURNACE CORP.
14247 TIREMAN AVE. • DEARBORN, MICH.

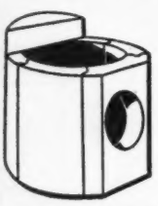
★ America's OUTSTANDING DOMESTIC REFRACTORY PRODUCTS for Long Lasting Installations

PRODUCED BY

McLEOD & HENRY CO., INC.

100 years of quality refractory products. All made of "Steel Mixture" quality flint clay with fusion point of 3200° F.

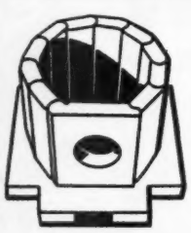
★ NU-TROJAN



COMBUSTION CHAMBER

A permanent installation. Its 2" wall thickness holds it together without steel bands. 5 sizes to fit all boilers. Includes Baffle Head and 15 lbs. of floor and bonding material.

★ STEEL-MIXTURE flexible



COMBUSTION CHAMBER

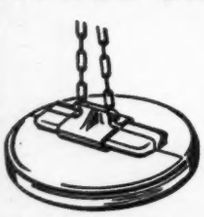
Can be shaped to any contour. Interlocking joints are air-tight. In package sets with 15 lbs. of bonding and flooring material and in individual runners.

★ WEBCO TRIPOD

REFRACTORY BAFFLE

Guaranteed permanent. Plate is 12" Dia. No. 1 size removable legs for chambers up to 12"; No. 2 size for up to 14".

★ FUEL SAVER



HANGING BAFFLE

Has only 2 parts. Supplied in round shape from 12" to 24" Dia.; rectangular shapes 12"x14" to 16"x24".

Send for Full Description on All Items. Jobbers Inquiries Invited. Write Dept. 61.

Distributed Exclusively By

A. R. WEBBER CO. INC.

780 STATE ST., NEW HAVEN 11, CONN.

Everything for the Oil Burner Trade

ply worded explanation of the present fueloil supply situation, pointing out that the expected "shortage" is not in crude oil but rather in steel, lack of which is limiting expansion of transportation and storage facilities. The background of the group, organized since 1922, is discussed in the letter's opening paragraphs. Next, coal strikes, "higher coal prices, higher gas prices, and the comparatively low price of fueloil" are cited as contributing to the growing expansion of the use of oil as a fuel. Coupled with increased consumption by railroads and industry, more fueloil is being used now than during the war years, continues the letter.

Home-owners, now using oil, are advised to save all that is possible by turning down thermostats at night, closing off extra, unused rooms and by having the oilburner cleaned, checked and adjusted this summer. Also, the letter contains a suggestion for orders to be placed now for next season's fuel. Home-owners who are contemplating installation of an oilburner are admonished to determine in advance that they will have a source of supply for oil for next winter.

Panel Heating Committee Holds Meeting in Cleveland

THE RESEARCH LABORATORY, Cleveland, Ohio, of the American Society of Heating and Ventilating Engnieers, was the scene June 30 of a meeting of the newly appointed Committee on Panel Heating in what was called the first step in the group's research program on the subject.

The committee designated four principal divisions for future research on panel heating, namely, heat distribution within and behind the panel, heat transfer between the panel and the space, comfort conditions and controls. Each of the four divisions will become the responsibility of a special committee, personnel for which will be selected from interested industry groups and representatives of ASHVE general membership. The committee instructed the Research Laboratory staff to prepare detailed programs and after the programs have been studied and approved by the subcommittees, they will be presented to the Society membership and industry for their support. It was pointed out that financial participation by both groups will be required.

G. C. Winans, Detroit Edison Co., De-

WANTED

A

Merchandising Distributor for the New York Area

A leading manufacturer of a complete line of automatic oil-fired equipment has available a franchise for a distributor in the greater New York area.

The manufacturer offers:

1. A quality line of boiler-burner units, winter air conditioners and conversion burners to cover all types of residential and commercial applications.

2. A merchandising program for the sale of packaged equipment which will lead to more profitable sales.

3. Exclusive distribution rights for the rich New York market.

4. Advertising and sales promotion help backed by extensive national advertising in consumer media for developing the market to its highest potential.

5. Training for engineering departments in application and maintenance of equipment.

The distributor must have:

1. A staff of merchandisers (field representatives) who can select the proper dealers and train these dealers to SELL automatic heating equipment.

2. Engineering "know-how" to assist dealers in surveys, installations, and maintenance.

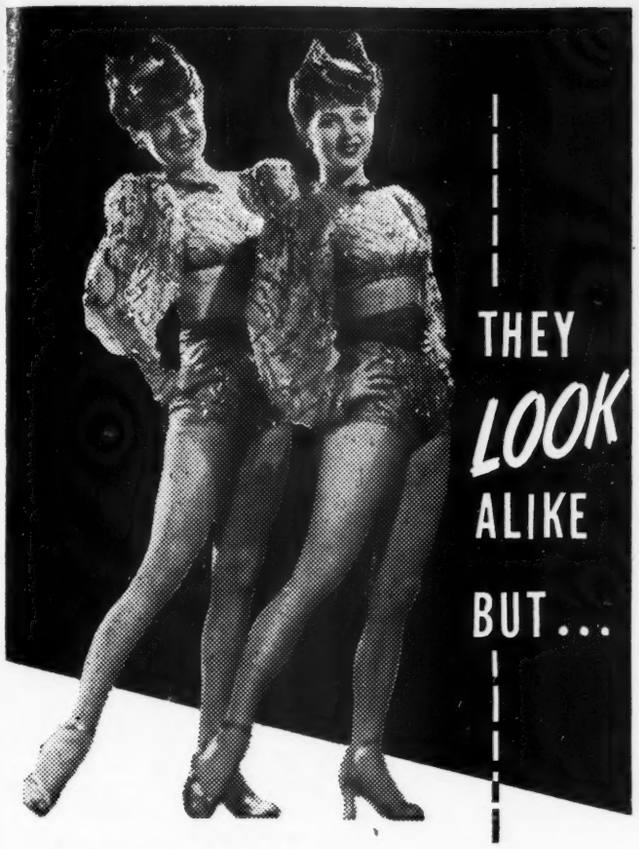
3. A desire to build up the distribution of this equipment in the territory through active sales promotion and advertising.

4. Adequate financial backing to handle annual sales of at least $500,000.

5. Warehousing facilities for stocking an adequate inventory for the territory.

BOX 662

FUELOIL & OIL HEAT



LET'S TALK

PERFORMANCE!

Are your profits protected by the certainty that every oil burner sale you make is final—no complaints, no costly adjustments, repairs or credits? SILENT KORTH gives you that vital profit protection because:

- SILENT KORTH is a one-piece blower housing and draft tube of quarter inch metal. Motor and pump bores precision machined in one setup—assuring accurate alignment between motor and pump shafts.
- SILENT KORTH has a proven reputation as a service-free burner.
- SILENT KORTH offers a COMPLETE line in various models and sizes—ranging from .75 to 20 G.P.H.

SILENT KORTH OIL HEAT — AIR CONDITIONING OIL FURNACES · OIL BURNERS · OIL BOILERS — REGISTERED U.S. PATENT OFFICE TRADE-MARK 470 034

JOBBERS and DEALERS
Write immediately for complete information on prices and our powerful Sales Help program. No obligation!

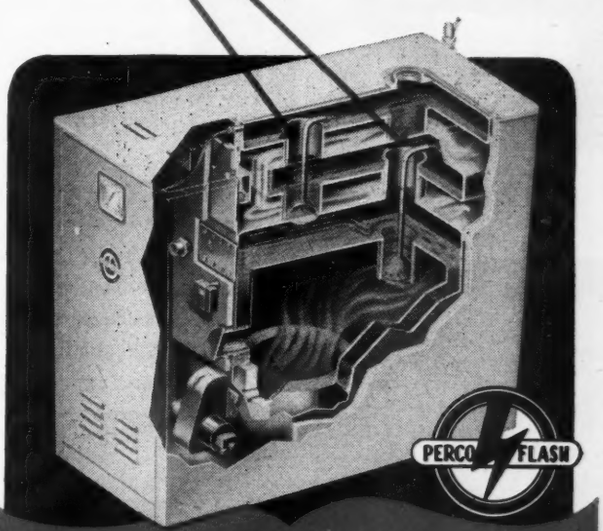
ECKHART MANUFACTURING CO.
470 First Avenue West
ROSELLE, NEW JERSEY

HEATS FASTER
SELLS FASTER
PERCOFLASH
The Flash Action BOILER

with the NEW Percolating Principle

What boilers will discriminating buyers choose when they're in the driver's seat once again? You can be certain of sure sales for PERCOFLASH, the unique, scientifically-designed and thoroughly tested boiler that heats in amazingly fast time—giving all benefits of low-cost steam or water heating and long, trouble-free life.

The PERCOFLASH patented percolater construction heats water faster than any other practical means. It's today's great new boiler development, by an experienced maker of quality heating products. Grow with PERCOFLASH. Get full details today!



WESTCOTT-ALEXANDER, INC.
MADISON, NEW JERSEY

PERCOFLASH

THE *finest* BOILER for OIL, GAS, or STOKER

IN NEW YORK 1ST CONSUMER ACCEPTANCE!

DEALERS: Make the Paragon Oil Burner a FIRST in your own community. Write for our Dealer Proposition "F" today!

Paragon NONE BETTER OIL BURNERS

Paragon Oil Burner Corp. Bridgewater St. at Newtown Creek, B'klyn 22, N. Y.

troit, is chairman of the Committee on Panel Heating. Other members are: John W. James, Iron Fireman Mfg. Co., Cleveland, vice chairman; Prof. A. B. Algren, University of Minnesota, Minneapolis; R. L. Byers, John Paul Jones, Cary and Millar, Cleveland; P. B. Gordon, Wolff and Munier, Inc., New York, N. Y.; L. N. Hunter, National Radiator Co., Johnstown, Pa.; J. S. Locke, Minneapolis-Honeywell Regulator Co., Minneapolis; H. R. Randolph, International Heater Co., Utica, N. Y.

A.G.A. Announces Plans For Cleveland Convention

THE COMMITTEE in charge of general arrangements and programs for the 29th Annual Convention of the American Gas Association, scheduled in Cleveland, October 6 to 8, met on July 2. A plan was agreed upon, which calls for general sessions each morning and meetings in the afternoon of the group's sections and departments.

NYOHA Names Committee On Handbook and Directory

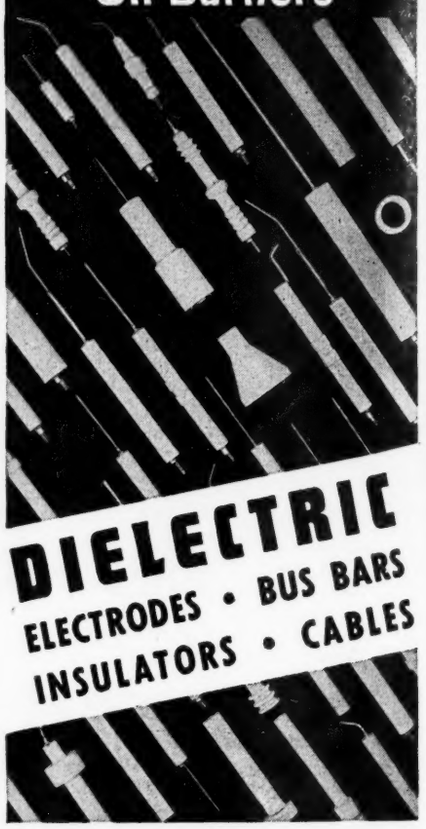
A LUNCHEON MEETING on July 7 concluded the tenure of the 1947 Handbook and Directory Committee of the New York Oil Heating Association, presided over by Dan Bierman, the retiring chairman. Salesmen were congratulated for their work on the current directory and at a drawing George Knittle won a portable fluorescent lamp, and other workers received a pair of Calobar sun glasses as a consolation prize.

The new committee for the 1948 Handbook and Directory was named with Phil Mitchell as chairman and Russell Dempsey and Harold Layman as members. An appeal was made by Mr. Mitchell for all old committee members to lend their help and experience to getting business for the new book.

◈

Hanley H. Smith is the new branch manager at Washington, D. C., for United States Radiator Corp., Detroit, Mich., and its Pacific Steel Boiler Div. Mr. Smith, formerly government representative for the corporation, succeeds F. F. Burke, resigned.

The Most Widely Used Ignition Assemblies for Oil Burners



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INSULATORS • CABLES

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The majority of oil burners being installed or serviced today are equipped with Dielectric electrode assemblies . . . and for good reason—

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2—They have all Underwriters Laboratories, Inc., approvals.

3—Standard assemblies are available for quick delivery.

4—Assemblies with special insulator and electrode sizes and shapes can be made on short notice.

In addition, Dielectric high tension cable assemblies and Dielectric bus bars for transformer and electrode layouts are available for any practical burner hook-up.

Let Dielectric's complete, prompt engineering cooperation help improve your burner and expedite production. Write for bulletin.

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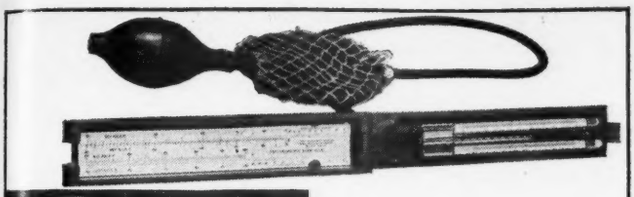

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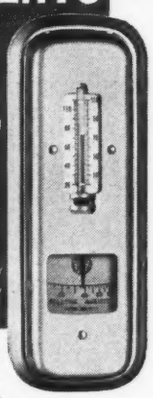
PSYCHROMETER, Hand Aspirated. High accuracy is assured by continuous air flow over the wet bulb induced by hand aspiration. Takes readings in confined spaces. No special skills required. Complete assembly comes in sturdy pocket kit . . . ready to use.



RELATIVE HUMIDITY Indicator continuously shows relative humidity in direct percent on a calibrated scale. Employs famous Bendix-Friez human hair element. Temperatures indicated over a range of 20° to 110° Fahrenheit.

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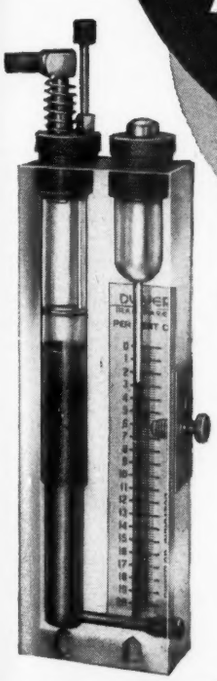
AUTOMATIC WIPING OILSEAL IN DWYER TRANSPARENT CO_2 INDICATOR



Because test samples are sealed from active absorbent solution, an exclusive Dwyer feature, NO PRE-ABSORPTION ERROR is possible. Thus 400 to 600 tests can be made accurately before renewing the absorbent solution. With its solid, clear, unbreakable plastic body, light enters from all sides, giving easiest possible reading. For precision accuracy be sure you Buy a Dwyer Transparent.

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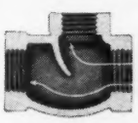
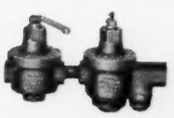
315 South Western Avenue, Chicago 12, Illinois

Triplex

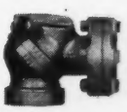
FLOW CONTROL UNITS Assure Hot Water at its Best



One-Pipe Distributors



Relief and Pressure Reducing Valves



Flow Control Valves

Direct Drive Circulators

Because the entire Triplex Flow Control system is so effectively simple, the same equipment that assures hot water heating at its best in homes can also be applied to large installations (stores, offices, public buildings, factories, etc.) by merely increasing the number or size of individual operating units. Hot water is automatically circulated—abundant heat supplied to the radiators instantly, whenever and wherever needed. As a result, the amount of radiation needed for unvarying comfort in any season is greatly reduced—and heat loss (through circulation) is reduced to an absolute minimum. Yes, Triplex means hot water at its best—in performance, popularity, and profits. Write for latest catalog today.

Triplex Sump Pumps—designed and built for long, trouble free service—are always in demand, too.

Triplex HEATING SPECIALTY CO., INC. PERU, INDIANA

In addition to units illustrated, the Triplex line includes—Direct Drive Horizontal Circulators, Indirect Drive Circulators, Expansion Tanks, Air Eliminators, Water Mixing Valves, Air Vent Valves, Indirect Heaters, Tankless Heaters, Control Units. Electrical Controls, and Barometric Draft Dampers.

SEE YOUR WHOLESALER TODAY

fueloil & oil heat

Efficient Fireboxes

(*Continued from page 82*)

Here is a suggestion for the conservative dealer who is installing a very large burner for the first time. If assurance cannot be obtained from the burner manufacturer that a firebox of a certain size will be satisfactory, use the dimensions in the table with this change. Make the firebox 4½" or 9" longer, using your best judgment, than the table indicates it should be. After you test-fire the burner, decide if shortening of the firebox is in order. It is easy to build a wall next to the back wall of a firebox to shorten it by 4½" or 9". Do not shorten the firebox if combustion with the long box is good, as judged by combustion testing instruments, or if the firebox reaches such high temperatures, when in use for more than a week then fired steadily for two hours, as to lead you to believe a smaller firebox might deteriorate rapidly.

The on-off cycle of an oilburner influences greatly the maximum temperature of the firebox, hence the probable life of the firebox, and should be taken into consideration when a firebox is being planned. Many dealers select firebox materials mainly according to the firing rates to be used, figuring that a higher firing rate should be matched by using firebox material suitable for a higher temperature, but fail to take the on-off cycle into consideration.

A dealer recently asked, for example, "In planning a firebox for 15 gph, should I plan on using firebrick good for 2600°, or good for some higher temperature?"

When he could give no information about the probable on-off cycle of the new installation, he was asked, "Will the temperatures in the boiler be so high, for example, as to melt down and ruin the cast-iron lining plates of the firing doors within a year or two?"

"Of course not," said the burner dealer, "I'm going to fire only 15 gph in a boiler which could be fired at least 22 gph, and which will give about 550° stack temperature at 15 gph. I'm firing the boiler lightly!"

To settle the thing, this dealer was brought to see a boiler which was being fired only 5.0 gph, and which was underfired to the point of giving only 375° stack temperature. Yet on this installation the burner gave 12% CO_2 and ran continuously for six hours at a time on coldest mornings, and the firebox was designed to reach high temperatures, with the result that the cast-iron lining plates of the firing doors were melted down and ruined, so as to require replacement, in three years. The point was that the 2600° brick offered by the particular manufacturer were proving satisfactory for this boiler, and would prove satisfactory for the larger boiler in which the contractor was interested, if he did not design for an exceedingly high-temperature firebox and did not use a firing rate and a control set-up that would give continuous burner operation on coldest mornings.

On one installation, where the burner runs a total of 12 hours out of 24 on a zero day, certain refractory material may last for ten years. On another installation which is identical except that the burner will operate 18 hours out of 24 on a zero day, and therefore will run for hours and hours continuously on coldest mornings, the same refractory material may fail within five years.

Although it is exceedingly difficult to take into account, to judge by what cer-

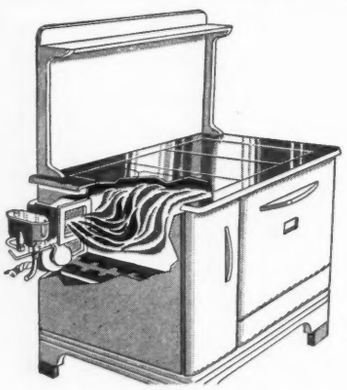
Profits!

Through the

SUPER-THERM

Combination

OIL BURNER



SALES prospects for this modernizing, easily installed oil burner are *all* owners of gas, wood and coal stoves and ranges. Super-Therm fits any size stove, front or rear —will last a lifetime—will not soot or smoke—has automatic safety features. Write now for details and *dealer profit* facts.

THERM OIL BURNER CO.

Pioneers of the Oil Burning Industry

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FILTERS

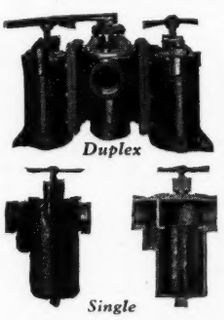
STRAINERS

PUMPS

Keep Fuel Oil Lines Open and Active

Year-in, year-out performance proves the skill of KRAISSL engineering design and the honesty of KRAISSL manufacture.

Class 72 Strainers and Filters



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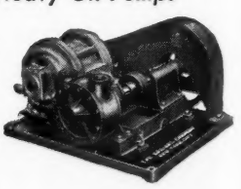
Single

Single and Duplex types for suction or discharge service — any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.



Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

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THE KRAISSL COMPANY

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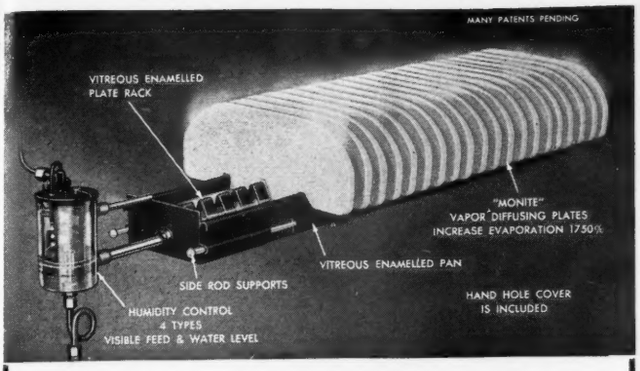
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VITREOUS ENAMELLED PLATE RACK
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SIDE ROD SUPPORTS
HAND HOLE COVER IS INCLUDED
HUMIDITY CONTROL 4 TYPES VISIBLE FEED & WATER LEVEL

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With a new job or with a repair job, it's easy for you to sell a Monmouth Humidifier! A Monmouth Flotrol, or a less expensive Micro-Feed model, adds healthful automatic humidity control to any gravity or air conditioning system. Sizes to fit any furnace, any plenum, easy installation, fool-proof operation. Furnished complete with all parts, and 8' copper tubing to tap into cold water line. Satisfactory operation assured by correct engineering and high plate efficiency.

Monmouth's moderate cost makes it a *must* in any good heating job. Sell the humidifier that really *works* and cuts out subsequent service calls. We also make units for steam radiator jobs. *Prices and details on request.*

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Go Down When
HANSON-GATES WATER HEATER
GOES IN!

Just think! Continuous 24 hour operation on one gallon No. 1 oil. Here's truly low cost water heating satisfaction. In its more than eighteen years devoted to the manufacturing of water heating equipment HANSON-GATES has brought perfection to the field of oil-fired heaters. Line up with Hanson-Gates today.

Type S-KV, as illustrated, is used on 30 and 40 gallon water storage tanks. The oil feeds the valve from 55 gallon tank or larger. All types equipped with double copper coil, insulated cabinet with 4½ inch burner, vaporizing type.

Type S-KVA automatically governs temperature of water going from high to low as water reaches desired temperature.

Type S-KS is equipped with 3 gallon metal tank and is used where larger tank would prove impractical.

Type S-KVA TWIN (automatic) is used on 60-80 gallon water storage tanks, ideal for two-family homes, etc.

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BACHARACH'S
NEW! All-Purpose DRAFT GAUGE
Meets Every Need for INSTALLING and SERVICING *Every Type of* HEATING EQUIPMENT

Gauge can be located any distance from test point. Reads .25" on 3-inch scale. Free movement of pointer at zero to indicate "puff-backs." Stands firmly, or can be hung on wall. Body serves as reel for carrying rubber tubing. Accurate, durable, dependable.

Prompt Delivery

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FROM THE MALE OF THE MONTH

ROTOFLAME

Dear John,

It's hard to believe that my letters are being printed in that Fuel Magazine.

Altho you sure surprised me, it makes me feel good to know that I'm helping promote ROTOFLAME equipment. I don't mind the publicity so much as long as you think that magazine is pretty good. Now tell me the truth, is it?

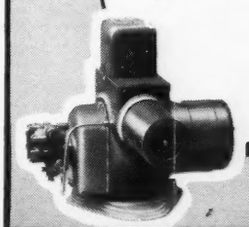
I have been working on some new tools for oil burner service. My best one so far is my quik service wrench. I thought that as long as my letters got around so much, some other fellows might like to see these tools.

I'm sending some pictures so if anybody wants to write you about them you can send them one.

Your faithful representative,

Earl Heeter

Specialist in Oil Burner Repairs



Exclusive territories available for well-established dealers

OIL EQUIPMENT LABORATORIES, Inc. ELIZABETH 4 NEW JERSEY

fuel oil & oil heat

tain burner dealers report when they are asked about it, the on-off cycle must be considered when problems of selecting the proper firebox material must be solved. Heavy thinking about the on-off cycle is just one more thing which makes the design and construction of the firebox the most difficult parts of installing an oilburner properly.

* * * * *

This is the third in a series of articles on proper installation of pressure burners.

Indiana Standard Explains Policy on Oil Exports

NO OIL has been exported to Russia by Standard Oil Co. (Ind.), it is explained in a memorandum to all company employees and dealers in Standard products. Even though the company had engaged in Russian export, the memo states, it would not have made available any less oil in its Midwestern marketing area, as the tight supply is due to a shortage in transportation facilities, and not to an actual shortage of crude and products.

The memo to employees and dealers was written "to assist you to answer intelligently questions that may be asked you on this subject," as a result of press comment on the exporting of oil. Points made in the memo are:

"1. Standard Oil Company (Indiana) has not shipped a single gallon of oil products to Russia. As a company it is not involved in any way in such shipments.

"2. For the past several months the United States has been importing more oil than it has exported. If all foreign trade were stopped, we would be net losers.

"3. In fairness to whatever companies have made shipments to Russia, it may be pointed out that such shipments, as shown by government records, have been at a rate of less than 1500 barrels a day this year as compared with an average rate of 6,889 barrels daily for the whole of 1946. The current shipments are a negligible quantity in comparison with U.S. needs. (Less than three one-hundredths of one per cent.)

"4. Shipments to Russia are made with full knowledge of the U.S. Government, the latter having the responsibility to decide whether it is good policy or not to ship oil to Russia or any other country. The general rule in international trade is for all companies and all nations to trade freely with each other unless their governments decree otherwise.

"5. The shortage in the Middle West would not have been lessened if no oil had been shipped to Russia. The main difficulty here is lack of transportation facilities to bring oil in from other areas. Our inability to bring adequate quantities from relatively nearby points in Texas and Oklahoma suggests the difficulty in moving into this area the products shipped from the West Coast to Russia.

"It has been our observation that individuals will assume a constructive attitude when they 'know the facts' pertaining to a given situation. We believe you will have a similar experience in using the information in this memorandum. In the interest of good relations with the public, the oil industry should not allow the impression to exist that oil shipments to Russia are responsible for current supply difficulties in the United States," the memo concludes.

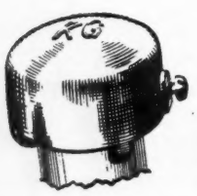
Easier to Install! Safe for Pressure Filling! The NEW, Guaranteed K-G Leak-Pruf TANK GAUGE

K-G Gauges have a new indicator cap that can be installed with the fingertips.

K-G Gauges can be installed in full or empty tanks. They are visible from all angles.

K-G Gauges are furnished with 1½" or 2" thread without extra cost.

Red Marking Here Shows Time to Refill



SLIP-ON VENT CAPS

CAST ALUMINUM

Simply slip onto pipe and lock with screw. No thread is required. Has a fine rust-proof screen.

EXPORT DEP'T.: 44 WHITEHALL ST., N. Y., U.S.A.
CANADA: INDUSTRIAL SPEC. CO., WESTON, ONT.
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114 WALLACE ST · NEW HAVEN 11, CONN.

NOISY MARTHA* OIL BURNERS

are obsolete in design, poorly constructed, difficult to install, give low efficiencies, made cheaper and cost more than pre-war — result, we have plenty on hand

WIRE — FLY OR PARACHUTE

ATLANTIC BURNER SUPPLY CO., INC.

"Everything for the Trade"

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*FICTITIOUS, ANY RESEMBLANCE, ETC.

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FOR GREATER PROFITS!

The Fuel Oil Conditioner Backed By More Than 100,000,000 Gallons of Fuel Oil Experience

Gives you repeat business—your customers need Parakem to prevent sludge deposits in the storage tank, lines and oil burner. Parakem improves atomization, allows quicker starting — results in a brighter, cleaner flame.

Parakem is specially priced for resale by dealers at good mark-up.

Sold in one and 5 Gallon Cans —15, 30 and 53 Gallon Drums

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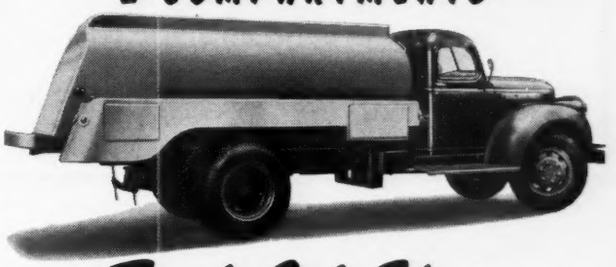

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Long Trouble-Free Service

Dependable Operation in Severe Temperatures

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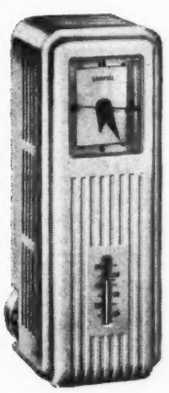

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A Complete Line of Quality Controls

There is a complete line of proven, dependable Sampsel controls for finer performance, easy installation, and freedom from servicing. Write for illustrated catalog.

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Sampsel

AUTOMATIC CONTROLS

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Solve your oil burner problem

GREATER OIL BURNER SALES

This new Oil Burner, scientifically designed by Heatcraft, has established a new standard of efficiency.
It embodies 7 special features, each of major importance . . . and in addition, incorporates ALL the other important oil burner advantages.
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TANK GAUGES
FOR ALL DOMESTIC OIL BURNER INSTALLATIONS
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LIQUIDEPTH INDICATORS
FOR ALL TANKS
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FOR ALL INDUSTRIAL AND CHEMICAL STORAGE

PETROMETER
AFTER TWENTY YEARS OF SERVICE
continues to be
THE
DEALERS CHOICE

DAN BIERMAN
P. O. BOX 27

ARTHUR BIERMAN
LONG ISLAND CITY 1, N. Y.

Oilheating Trends

(*Continued from page 11*)

1942, inclusive, published in the October, 1944, issue of FUELOIL & OIL HEAT, it was shown that the rate of replacement has little relation to the age of oilburners. It has a much stronger relation to national income levels. People buy burner replacements when they have money to spend and when a salesman asks them to buy. Not often do they buy a replacement because their existing burner is so dilapidated that it cannot be repaired. In the last prewar year, 1941, domestic oilburner replacements numbered 56,315. In the five subsequent years 1942-1946, inclusive, they averaged only 28,319. Thus, if we would think of 1941 as a normal year for replacement sales, we actually have an unfilled backlog of potential replacement demand amounting to 139,981 burners.

If, by starting a drive now, the industry could catch up most of that backlog this year, two important results would follow. First, wholesale prices of burners would be better sustained by moderating the expected high level of factory stocks at mid-fall; second, there would be less chance of installing too many burners for new oil users.

◈

Wilber F. Pray has become New York District manager for Askania Regulator Co., Chicago, Ill., manufacturers of industrial control equipment. Mr. Pray, who has been associated with Askania since its inception, will be located at 92 Gold St., New York 11, N. Y.

Kirby Walker has joined Consolidated Industries, Inc., Lafayette, Ind., as chief engineer. Mr. Walker is a native of Boston and for several years sold and serviced heating equipment in the New York area. In the late twenties he became a consulting engineer for large installations and also has been associated with American Radiator Co. and, more recently, with American Gas Machine Co. During the War he worked with Martin and Fairchild and was responsible for aircraft cabin heating and wing heating for removal of ice while in flight.

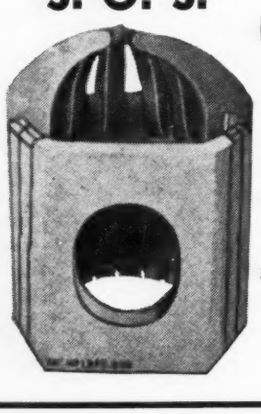
Standards Bureau Test House

(*Continued from page 70*)

tween rooms was greater for the space heaters in the living room than for the other heaters tested. This effect can probably be attributed to the fact that the rooms other than the one containing the heater are warmed by the overflow of heat from the living room through the doorways. Except for the space heaters, the average horizontal temperature differences from 2-inches to 60-inches above the floor did not increase with lower outside temperature.

Certain types of heaters may be suitable for houses of one construction and not suitable for other constructions. For example, a high temperature near the ceiling would not cause much additional heat loss if the ceiling were well insulated, or an insulated floor might permit the use of heaters that do not deliver warmed air at or near the floor level. Futhermore, some types of heaters that provide comfort in areas where extremely low temperatures do not occur may not provide comfort in colder climates. (*Cont. pg. 170*)

S. O. S. FIRE-KING
COMBUSTION CHAMBER



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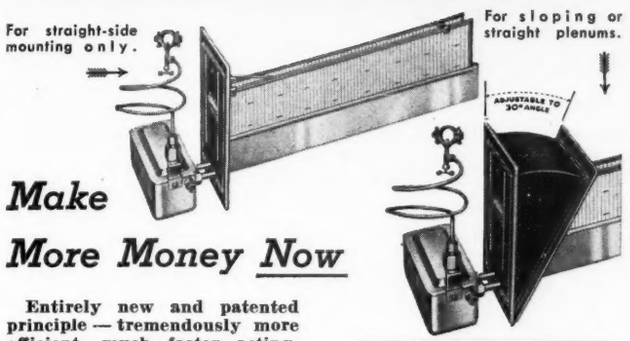

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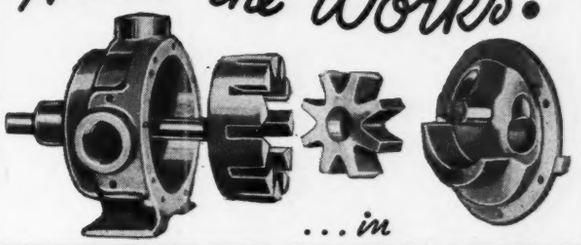

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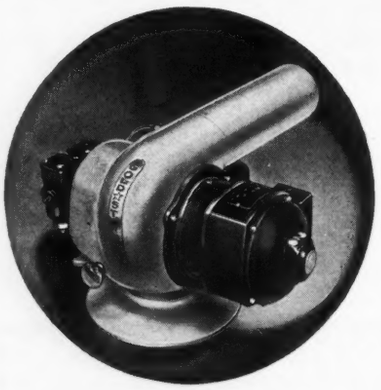

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Although standards of performance in the field of vertical or horizontal temperature differences in residences have not been established, the Bureau tests indicated that the air temperatures in the living zone of all rooms should be in the range from 65° to 80° F. for comfort when heated by the conventional types of heating systems. A floor temperature of 60° F., when continued for 1 hour or more, was found to be too low for foot comfort; when a floor temperature of 65° F. was continued for the same period, discomfort was no longer apparent. It was further observed that air temperatures of approximately 85° F. around the level of the head became oppressive, especially if the air had an appreciable velocity.

The results obtained with the devices used in the test bungalow show need for further improvement in the design of house construction and heating systems in order to provide comfort in all rooms of basementless houses. A more uniform temperature can probably be obtained either by the use of more insulation in the house elements, by improving the heat-distribution systems, or by a combination of both.

OHI Directors Meet

(*Continued from page 79*)

shows be open to the public, though there was some objection to public attendance on the part of accessory manufacturers who sell nothing directly to the public.

Carl Jonswold, (Arrow) Chicago, chairman of the Fueloil Supply Committee, presented a report that indicated tight supply in the Middle West, and easiest supply on the Pacific Coast. He said major oil companies and independents were shipping crude into the Middle West by tank car at considerable cost in an attempt to increase the supply of product. Barge transportation on the Mississippi River, he said, is working at capacity, and there is little hope that steel will become available in time to increase refining capacity, transportation and storage facilities for the coming heating season.

Mr. Jonswold made six recommendations as the result of his committee's study: (1) that a national campaign be started immediately to get all available customer and bulk storage filled, and an effort be made to find new storage that might be utilized; (2) that manufacturers be encouraged to hold shipments to a reasonable increase over 1946 levels; (3) that dealers concentrate efforts on increasing efficiency of existing oilburner installations to cut fuel consumption in the individual plant; (4) that manufacturers recommend to the dealers that increased effort be put on replacement sales in order that available oil be used to the best advantage; (5) request that the American Petroleum Institute use part of available educational funds to tell the public about the current supply situation, and to impress on the public that there is no shortage of oil, but only of transportation and storage, and (6) to encourage tank car movement of oil by the major companies, and recommend that they stop sales of heavy oil to utility firms where other fuels are available and can be used. Mr. Jonswold also asked the industry to handle tank cars on a 7-day basis in order to speed turn-around time and make the best possible use of the available cars.

The next meeting of the Board is scheduled for Chicago, October 14.

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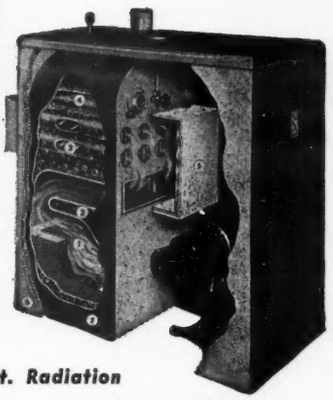

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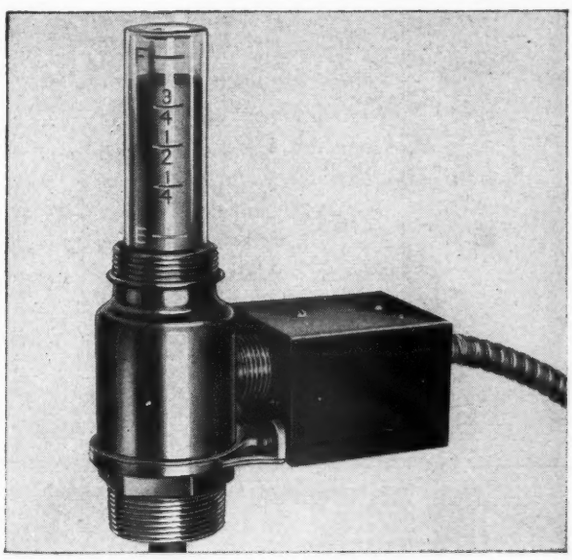

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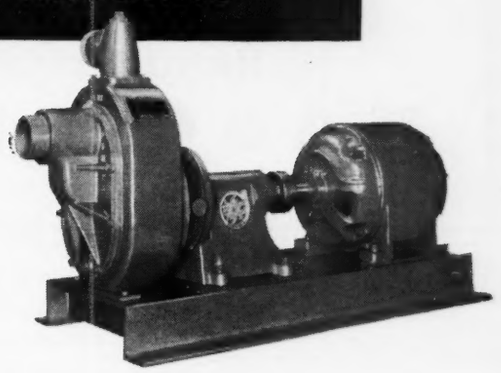

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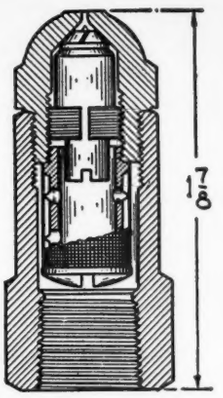

Draft and Oilheating

(*Continued from page* 78)

resulting in lack of heat and excessive oil consumption. Fluctuating, unsteady draft makes it impossible to adjust the burner properly, causes breakdowns, and creates vibration and flame sounds.

Down-draft must, of course, be avoided under all circumstances. A down-draft may be caused by installing a heater in a building which is not as tall as the surrounding buildings. If this condition exists, a down-draft hood must be installed on the top of the chimney to prevent the wind coming down the chimney and interfering with the heater operation.

Where To Measure Draft

To get the full draft story on any job, you make three holes, by punch, by drill or by the time-honored hammer and nail method, as the locations call for. Make one hole in the smokepipe close to the smoke outlet of the heater, one in the smokepipe close to the chimney (if the chimney is more than ten feet from the boiler or furnace), and one in the port or door that gives access to the combustion chamber. The last one may often be obtained by removing one of the screws holding the firedoor lining to the firedoor.

To the burner man, the combustion chamber or firebox draft reading is most important, and the other readings important in sizing up the draft characteristics of chimneys, smokepipes, boilers and furnaces.

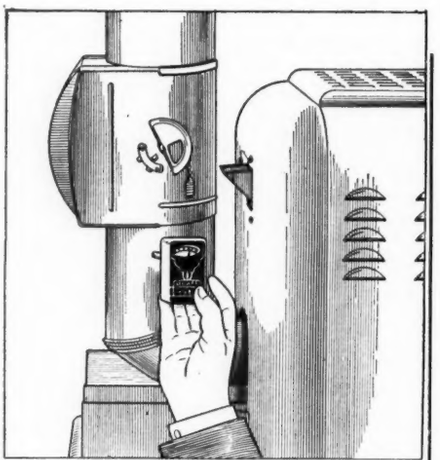

Fig. 6

If draft measurements are taken on the smokepipe and a damper or draft regulator is provided, the readings must be taken on the furnace side of the damper (see Fig. 6) to obtain a true indication of the draft at the smoke outlet of the furnace. To obtain an accurate check on the draft under actual furnace operation, the burners must be operating when draft readings are taken.

Draft Requirements

How much draft do you need on any type of oilheating installation and why is it important to have just that much, no more, no less? The best way to answer it, is to deal separately with the different types of domestic oilburners.

Natural Draft Burners: This group includes vaporizing burners of either range or pot type. Such burners are used in oil-burning stoves, space heaters and water heaters.

Insufficient draft causes these oil appliances to fall short of carrying their loads. It also causes serious troubles connected with incomplete combustion, i.e., formation of smoke and soot that may escape into the rooms if the heating appliance has air leaks.

(*Continued on page* 174)

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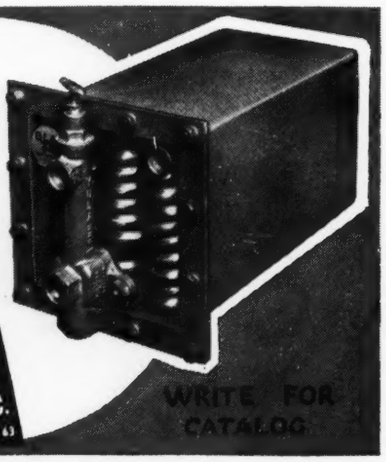

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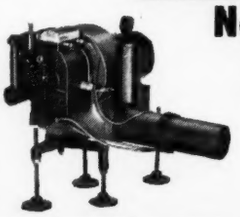

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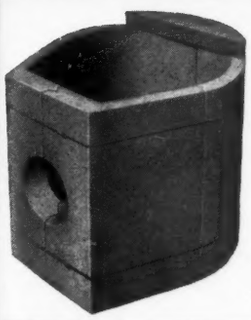

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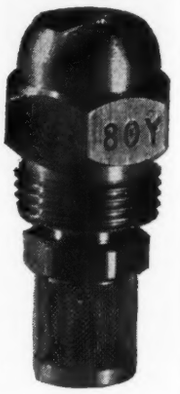

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Excess draft wastes oil by chilling the flames. Also, it can make it impossible to operate the flames at low settings, and it may invite the use of flames large enough to damage heaters.

Good results generally do not come from connecting small burners to greatly over-sized chimneys, for these remain cold and chill the small amounts of gases flowing through them. If you must connect a water heater to a greatly oversize flue, run a small tight smokepipe up the flue for at least ten feet.

Notoriously poor results come from using outside, improvised chimneys made of smokepipe, thin metal, or sewer tile. Their walls conduct heat rapidly, and cause the chimney to chill to the degree that gives poor, if any draft. If an outside stack must be used, it should be surrounded by an outside casing providing at least ½" air space which should be sealed at top and bottom.

In general and bearing in mind the great difference in burner construction, you can expect good results with chimney drafts upwards of .05" water at medium fire, .04" water at low fire and .08" water at high fire. Chimney draft can be as high as draft comes if you provide an automatic damper capable of doing a real job in balancing draft.

Getting down to the combustion chamber, or firebox draft, you might run from .02" to .06" water, depending on the type of burner and the design of the heater. Once wise to the particular equipment you handle, you will know how much draft is needed to insure clean burning at certain firing rates. You must use a draft regulator for most jobs, but draft regulator settings are no indication of how much draft is over the fire. With different chimney drafts, you get different amounts of draft over the fire, even with the same draft regulator settings. Hence a draft gauge is required to get best results.

Firebox draft for natural draft burners depends, first on the design of the equipment; second, on how much oil you must burn per hour. A certain natural draft water heater, for example, needs .04" water minimum firebox draft to burn clean at its maximum firing rate. Since it has simply a vertical tube as its flue travel, and since this has considerable stack effect, you need only .05" water draft at the smokehood to get the required .04" water firebox draft. Interesting to note is that another natural draft unit, this time a space-heater, requires fire box draft of only .02" water for its maximum firing rate, but because this unit has a long flue travel of narrow cross-section, to get this firebox draft you need a smokehood draft of about .07" water. If the dealer handling this space-heater is draft-smart, he will watch his step in connecting it to improvised chimneys.

Rotary Burners: These burners are either vertical or horizontal types and use either nozzle type burners (sometimes called "wall flame rotaries") or rotary cup burners. Regardless of design, all rotary burners depend, for clean, efficient burning and smooth, silent operation, on proper draft conditions. Though they have blowers, the air for combustion will not take the proper path with insufficient draft. Extremely low, or fluctuating draft can cause the fire to "snuff out," that is, smother and go out. Clean burn-

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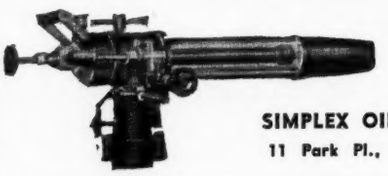

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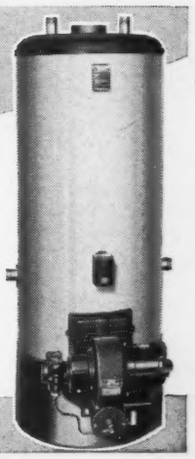

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ing is next to impossible with insufficient draft, and oily vapors are likely to leak out of furnaces and boilers. Firing this type burner at too low a rate for the hearth and burner size, might be necessary for continued operation under adverse draft conditions. Again, this gives low flame temperatures and incomplete combustion.

Gun-Type Burners: With this type of burner insufficient draft may cause the boilers or furnaces to operate with pressure in the combustion chamber. This leads to poor combustion, and to the escape of soot, smoke, and odors into the cellar. Also, it might limit the capacity of the burner. Best operation comes with a slight negative pressure in the combustion chamber; this results from having a certain draft on the smokepipe, depending on the type of boiler or furnace. A boiler or furnace having extremely long, tortuous flue passages requires a higher draft on the smokepipe than a unit having short, easy-flow passes.

The flame may "leave the nozzle," or go out if the draft varies greatly during the operation of the burner. Boiler pulsation and flame vibration frequently come from low or erratic draft. Also, erratic or insufficient draft makes it impossible to adjust the burner for highest efficiency, because maximum efficiency depends on the flame getting the proper amount of air each time the burner runs, no more and no less. Poor draft may also make it necessary to burn lighter, more expensive oil than could be used otherwise.

Burners of the forced draft type are less "finicky" about chimney and combustion chamber draft than natural draft oilburners. Still, if the draft in the combustion chamber runs less than .02″ water, there will likely be complaints about odors when the burner starts after a few hours idleness. There might be additional complaints about rumbling, if you use "close" settings for highest efficiencies. Ordinarily, therefore, regard .02″ water firebox draft as rockbottom for guaranteed results in all kinds of weather. Seldom is more than .08″ water firebox draft needed for forced draft domestic oilburners. That makes .05″ water the general happy medium.

How much chimney draft do you need to get .05″ water firebox draft in a boiler or furnace? The answer to this question depends on the boiler or furnace, or more specifically, on its flue travels. A certain modern steel, two-pass boiler model has a draft drop of about .13″ water when fired at rating, and when certain baffles are in its flues. To get .05″ water firebox draft under these conditions with this boiler, you need a chimney or smokepipe draft of .18″ water. And remember, if you plan for lower range stack temperatures (say under 500° F. that naturally comes with highly efficient boilers), you will not get the chimney draft that is obtainable with normal stack temperatures.

In a properly constructed, fair-sized residential chimney you can expect to find the draft from .12″ to .24″ water. If the draft is lower than this range after the heating plant has operated for about one hour, and your stack temperature runs above 400° F., probably you have a legitimate complaint to make to the owner about his chimney not giving enough draft for typical heating equipment. Remember that here we are considering chimney draft — our object in having this much chimney draft is to get about .05″ water firebox draft.

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